

GEOHERMAL POWER CORPORATION

HEAT FLOW REPORT

JANUARY, 1978

CONDUCTIVE HEAT FLOW FROM SHALLOW WELLS*
 NEAR ROOSEVELT HOT SPRINGS, UTAH

DEPTH INTERVAL		THERMAL* CONDUCTIVITY	TEMPERATURE* GRADIENT	HEAT FLOW
Feet	Meters	M Cal/CM-SEC-°C	°C/KM	HFU
GRADIENT WELL #1				
95	28.95	5.18	121.6	6.29
140	42.67	6.23	88.4	5.50
187	56.99	6.90	124.0	8.55
245	74.67	6.79	69.6	4.72
285	86.87	7.27	71.2	5.17
345	105.16	6.30	55.2	3.47
GRADIENT WELL #2				
90	27.43	6.06	38.4	2.32
140	42.67	6.48	41.6	2.69
190	57.91	7.35	64.0	4.70
240	73.15	6.39	43.2	2.76
290	88.39	7.83	33.6	2.63
GRADIENT WELL #3				
10	3.05	6.28	—	—
60	18.29	5.67	88.0	4.99
110	33.53	7.05	54.0	3.80
160	48.77	6.99	50.8	3.55
267	81.38	7.64	26.8	2.05
300	91.44	8.73	—	—

* UNCORRECTED

GRADIENT WELL #4

40	12.19	6.78	82.8	5.61
90	27.43	6.41	76.8	4.92
140	42.67	4.12	55.6	2.29
190	57.91	5.33	61.6	3.28
240	73.15	7.46	48.0	3.58
300	91.44	7.06	<u> </u>	<u> </u>

GRADIENT WELL #5

30	9.14	5.57	<u> </u>	<u> </u>
60	18.28	5.22	50.8	2.65
90	27.43	5.60	32.0	1.79
120	36.57	5.19	9.2	.48

GRADIENT WELL #6

90	27.43	5.34	270.8	14.46
120	36.57	6.52	220.8	14.39
190	57.91	6.97	94.4	6.58
245	74.67	6.57	120.0	7.88
300	91.44	7.31	<u> </u>	<u> </u>

GRADIENT WELL #7

10	3.05	5.97	<u> </u>	<u> </u>
60	18.28	5.89	20.0	1.18
110	33.53	5.46	24.8	1.35
155	47.24	4.53	28.8	1.30
210	64.00	4.81	22.0	1.06
255	77.72	4.62	22.0	1.02

GRADIENT WELL #8

90	27.43	7.41	81.6	6.05
140	42.67	6.55	76.4	5.00
190	57.91	6.75	69.2	4.67
240	73.15	6.70	81.6	5.47
290	88.39	7.13	70.8	6.30
340	103.63	6.82	76.0	5.18

GRADIENT WELL #9 B

92	28.04	7.49	52.0	3.89
140	42.67	6.63	23.6	1.56
190	57.91	5.94	21.2	1.26
240	73.15	5.63	19.6	1.10

GRADIENT WELL #10

10	3.05	5.95	_____	_____
60	18.28	5.33	49.6	2.64
110	33.53	5.58	50.8	2.83
160	48.77	6.15	31.2	1.92
196	59.74	7.04	28.4	1.99

GRADIENT WELL #11

30	9.14	6.53	149.6	9.77
60	18.28	6.52	91.2	5.95
90	27.43	6.62	128.4	8.50
110	33.53	6.07	20.7	1.26

GRADIENT WELL #12

70	21.34	5.84	110.0	6.42
120	36.58	4.46	98.0	4.37
170	51.82	3.92	35.2	1.38
210	64.00	4.27	26.0	1.11
260	79.25	5.01	29.6	1.48

GRADIENT WELL #13

60	18.28	4.13	4.8	0.19
90	27.43	4.04	144.4	5.83
140	42.67	6.43	2.4	0.15
190	57.91	6.94	16.4	1.14
240	73.15	7.72	12.8	0.99

GRADIENT WELL #14

100	30	5.45	222.8	12.14
210	62.5	3.22	192.8	6.21
300	90	7.80	141.2	11.01
400	120	7.12	142.8	10.17
500	150	7.03	118.0	8.30

HOLE NO. 1

Location: Lower Ranch Canyon Road
 TN-RG-SEC: 28S - 10W-1
 Company/Owner: Geothermal Power Corporation
 Hole No.: I
 Total Depth: 400 Ft.
 Date Completed: May 23, 1977

<u>DEPTH</u>	<u>LITHOLOGY</u>
15	V. coarse sand, fine to medium. Gravel poorly sorted. Little or no clay. Qtz., felds., volc. rck frag., gr. frag., obsid. frag., limestone?
32	Qtz. 75-80%, feld., obsid., pumice, grey angular rhyolite frag., poorly sorted, angular to subangular, frag. up to 4mm. Little to no clay.
40	Poorly sorted, ang. to subang., grains of qtz. 80%, feld. 15%, obsidian, pumice, and rhyolite frag. little to no clay.
50	Same. Rhyolite has magnetite inclusions.
60	Same. Fine sand to med. gravel.
75	V. coarse sand to small gravel. Frags. up to 1cm., pumice 7% poorly sorted, angular to subang.
86	Med. sand to small gravel. Qtz., 80%, feld., possibly metamorphic, poorly sorted. Pumice and obsidian frags.
95	Med, sorted sand, subrounded grains of qtz. 30%, pumice 20%. Rounded obsid grains. Qtz. up to 4 mm.

- 107 Mod. sorted sand, more consistent grain size. Some clay. Pumice 25-30%.
- 117 Same. More clay = 15%.
- 127 Same. Finer grained, better sorting.
- 140 Same.
- 150 Same. More clay, clayey sand.
- 155 Finer grained material. Drilling thru a granite boulder. Angular fresh chips of granite.
- 160 Same.
- 170 Same.
- 187 Clay 15%, coarse sand to small gravel. Angular chips of light grey rhyolite 3mm., angular chips of obsidian. Qtz 70% no granite, poorly sorted alluvium.
- 200 Same. Clay 15%.
- 210 Less clay 10%, med. to coarse sand mod. poorly sorted, rhyolite chips 4 %.
- 220 Finer grained material, clay 10% med to v. coarse sand.
- 230 Same.
- 245 Not good sample due to backreaming.
- 260 Very clayey sand.
- 265 Change in lithology, v. little clay, qtz 85%, feld 10%, rhyolite 2%. Coarse sand to med. small gravel, ang. grains.
- 275 Hit a boulder. Clayey sand, clay 15%, coarse sand to small gravel. Qtz. 80%, feld. 10%, hematite grains, med. poorly sorted grains.

285 Same. More rhyolite, basalt and green rk frag.

295 Clay 8%, pink rk frags. (plutonic), obsidian 4%.

305 Same.

315 Same. Clay 20%, green rk frags. (volcanic)

325 Same.

335 Same.

345 Clay 25%, larger more numerous rock frags., ie rhyolite.

348 Less clay, coarser material, angular frags of rhyolite and qtz.

350 Same. Clay 10%.

365 Same.

380 Same. Clayey sand and gravel.

390 Same.

400 Same.

TEMPERATURE-DEPTH LOG

Location: Lower Ranch Canyon Road **Tn/Rg/Sec:** 28s-10W-1
Company: Geothermal Power Corporation **Hole Number:** 1
Max. Depth: 122M **Elevation:** 1622M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.030	352.0
7.5	12.910	266.0
10	13.575	138.8
12.5	13.922	116.4
15	14.213	120.4
17.5	14.514	152.4
20	14.895	167.6
22.5	15.314	154.0
25	15.699	156.0
27.5	16.089	121.6
30	16.393	118.0
32.5	16.688	103.6
35	16.947	115.6
37.5	17.236	118.4
40	17.532	80.0
42.5	17.732	88.4
45	17.953	76.8
47.5	18.145	79.2
50	18.343	68.4
52.5	18.514	62.4
55	18.670	124.0
57.5	18.980	102.4
60	19.236	

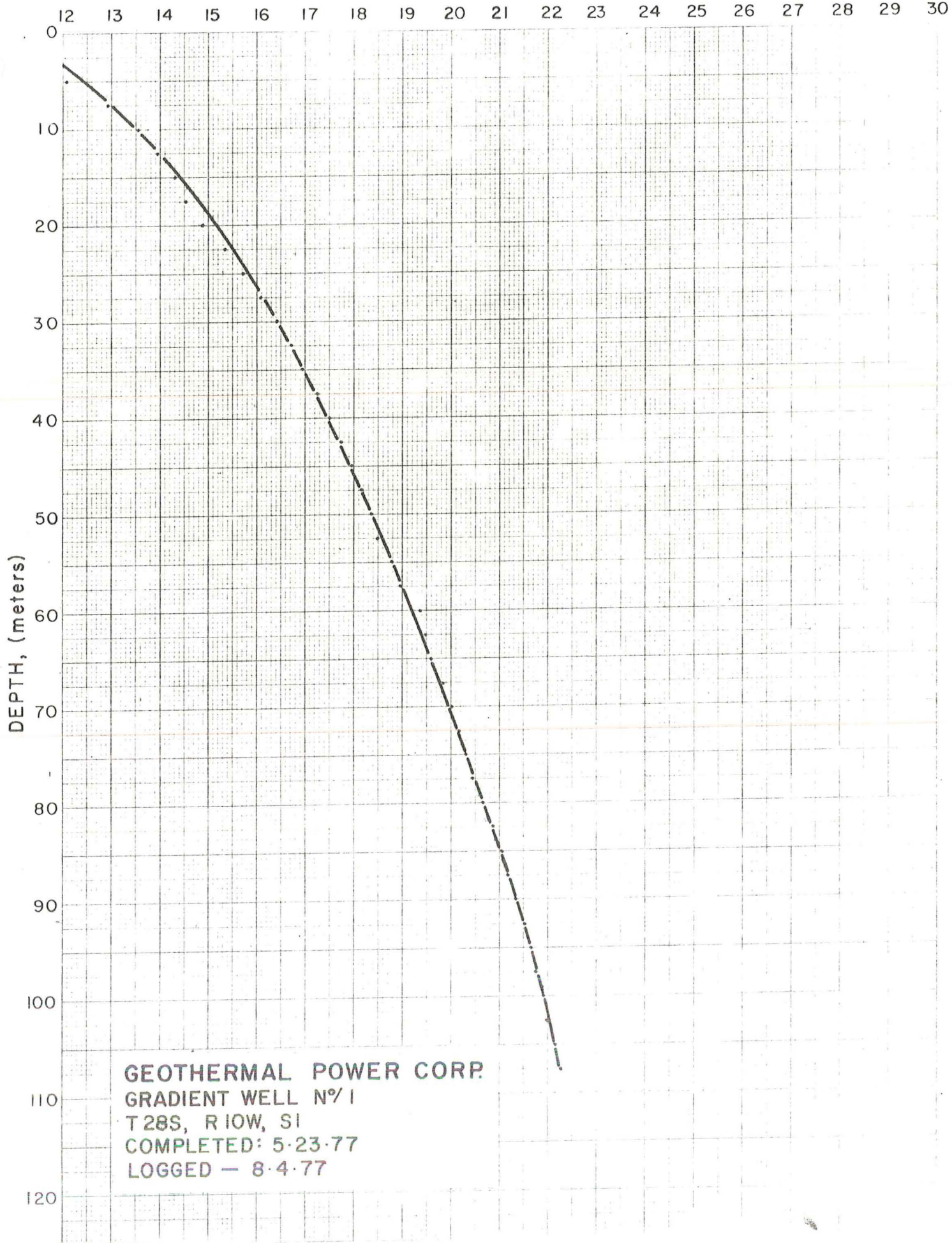
TEMPERATURE-DEPTH LOG

Location: Lower Ranch Canyon Road Tn/Rg/Sec: 28s-10W-1
 Company: Geothermal Power Corporation Hole Number: 1
 Max. Depth: 122M Elevation: 1622M Date Logged: 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
60	19.236	62.4
62.5	19.392	80.0
65	19.592	84.0
67.5	19.802	83.6
70	20.011	42.4
72.5	20.117	69.6
75	20.291	61.6
77.5	20.445	74.8
80	20.632	88.8
82.5	20.854	60.4
85	21.005	71.2
87.5	21.183	57.2
90	21.326	74.0
92.5	21.511	46.4
95	21.627	49.6
97.5	21.751	61.6
100	21.905	36.8
102.5	21.997	48.8
105	22.119	55.2
107.5	22.257	-76.7
109	22.142	

Bottom

TEMPERATURE, °C



HOLE NO. 2

Location: Ranch Canyon
 TN-RG-SEC: 28S - 9 W - 6 abb center
 Company/Owner: Geothermal Power Corporation
 Hole No. 2
 Total Depth: 300 Ft.
 Date Completed: May 25, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Qtz, felds., biotite, coarse, poorly sorted sand. Granitic alluvium.
20	Same. Rhyolite frags.
30	Same. Some med. sized gravel.
40	Same. More rhyolite frags.
50	Same.
60	Same.
70	Same.
80	Same. More rhyolite = 7%.
90	Same. Coarse material, white pumice, obsidian and granite frags.
100	Same. Less obsidian.
110	Same.
120	Same.
130	Same, finer cuttings.
140	Same, better sorting in grain size.
150	Same. Less Granite frags.
160	Same.
170	Same.
180	Same.

190	Same.
200	Same.
210	Rhyolite, qtz, feld, obsidian grains, angular to subangular, mod. sorted, clay 3%, green and red grains 5%.
220	Same. V. coarse to med. sand sizes.
230	Same. Less coarse & angular qtz grains.
240	Same little or no clay, white pumice frags.
250	Same.
270	Same. Finer material.
280	Same.
290	Same. Uniform grain size.
300	Same.

TEMPERATURE-DEPTH LOG

Location: Near Ranch Canyon **Tn/Rg/Sec:** 28s-9W-6 abb center
Company: Geothermal Power Corporation **Hole Number:** 2
Max. Depth: 91M **Elevation:** 1622M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.767	
7.5	13.057	116.0
10	13.436	151.6
12.5	13.633	78.8
15	13.778	58.0
17.5	13.858	32.0
20	14.027	67.6
22.5	14.157	52.0
25	14.259	40.8
27.5	14.355	38.4
30	14.519	65.6
32.5	14.637	47.2
35	14.804	66.8
37.5	14.950	58.4
40	14.950	62.4
42.5	15.106	81.2
45	15.309	41.6
47.5	15.413	67.2
50	15.581	56.8
52.5	15.723	50.8
55	15.850	50.8
	15.977	

TEMPERATURE-DEPTH LOG

Location: Near Ranch Canyon **Tn/Rg/Sec:** 28s-9W-6 abb center
Company: Geothermal Power Corporation **Hole Number:** 2
Max. Depth: 91M **Elevation:** 1622M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.767	
7.5	13.057	116.0
10	13.436	151.6
12.5	13.633	78.8
15	13.778	58.0
17.5	13.858	32.0
20	14.027	67.6
22.5	14.157	52.0
25	14.259	40.8
27.5	14.355	38.4
30	14.519	65.6
32.5	14.637	47.2
35	14.804	66.8
37.5	14.950	58.4
40	15.106	62.4
42.5	15.309	81.2
45	15.413	41.6
47.5	15.581	67.2
50	15.723	56.8
52.5	15.850	50.8
55	15.977	50.8

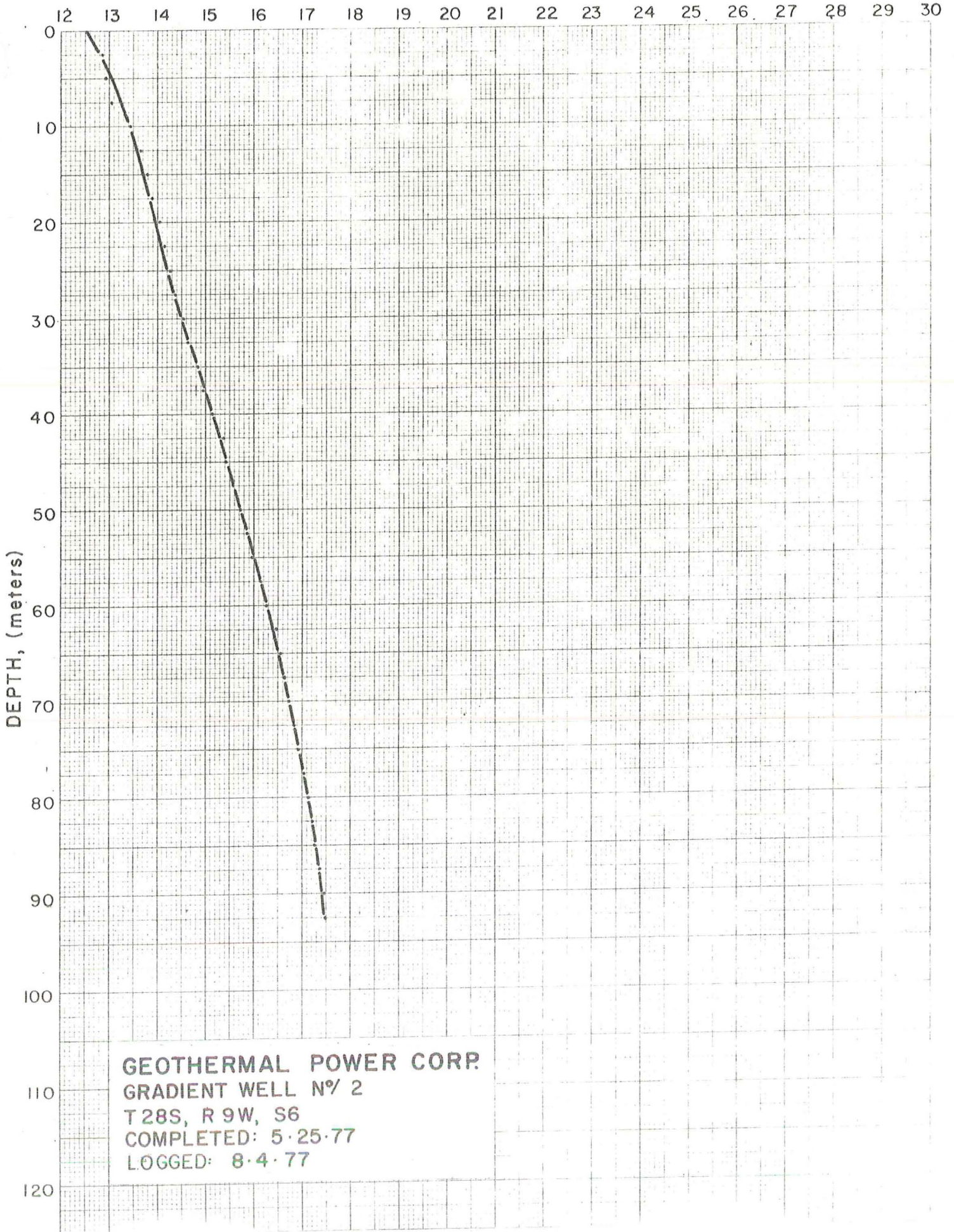
TEMPERATURE-DEPTH LOG

Location: Near Ranch Canyon Tn/Rg/Sec: 28s-9W-6 abb center
 Company: Geothermal Power Corporation Hole Number: 2
 Max. Depth: 91M Elevation: 1622M Date Logged: 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	15.977	52.4
57.5	16.108	64.0
60	16.268	74.0
62.5	16.453	43.2
65	16.561	38.0
67.5	16.656	28.0
70	16.726	39.2
72.5	16.824	43.2
75	16.932	32.8
77.5	17.014	35.2
80	17.102	42.8
82.5	17.209	29.6
85	17.283	31.2
87.5	17.361	33.6
90	17.445	39.0
91	17.484	

Bottom

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 2
T28S, R9W, S6
COMPLETED: 5-25-77
LOGGED: 8-4-77

HOLE NO. 3

Location: North of Corral Canyon
 TN-RG-SEC: 28S-9W-4 bbb NW
 Company/Owner: Geothermal Power Corporation
 Hole No. : 3
 Total Depth: 300 Ft.
 Date Completed: May 28, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Coarse sand to small gravel (3mm) qtz, rhyolite (5%), feld, obsidian, smoky qtz, mod to poorly sorted, angular, little to no clay.
20	Same. Granite frags 2%.
30	Coarse material to 8mm, feld abundant, poorly sorted.
40	Same. Granitic and rhyolitic alluvium.
50	Same.
60	Same. Rhyolite frags. 7%.
70	Same. Rhyolite frags (10%) up to 8mm and angular.
80	Coarse, poorly sorted, rhyolite frags up to 10mm, qtz and feld. up to 5mm.
90	Finer grained, med. to coarse sand 75%, clay 5%.
110	Med to v. coarse sand, qtz 70%, rhyolite frags. down to 7%, felds 15%, formation changing periodically.
120	Same.
130	Same. Granitic frags up to 4%.
140	Same. Feld spars appear to be K-spars.
150	Same. Hornblende lathes intergrown in K-spar. Gold or pyrite flakes present.

160	Same.
170	Same.
185	Same. Clay 10% fewer rhyolite frags.
200	Mod. sorted, ang to subang. grains of qtz, felds, rhyolite, obsidian, med to coarse sand, biotite flakes, no clay.
210	Same.
220	Same. Numerous fe-stained felds. No clay.
230	Same. Clay 10%
240	Clay 5-7% green rock frags. appear to be diorite (3%) probably a boulder.
250	Same.
260	Same. Formation taking much H ₂ O fracture porosity high.
268	Same. More diorite frags, magnetite 8%.
280	Fine grained cuttings of qtz, feld, rhyolite, magnetite (8%) biotite flakes, obsidian, granitic frag, no diorite. Diorite probably in a boulder.
290	Same.
295	Same. Finer grained.
300	Same. No coarse grains at all.

TEMPERATURE-DEPTH LOG

Location: North of Corral Canyon **Tn/Rg/Sec:** 28S-9W-4 bbb NW
Company: Geothermal Power Corporation **Hole Number:** 3
Max. Depth: 91M **Elevation:** 1798M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	11.780	183.2
7.5	12.238	216.4
10	12.779	102.8
12.5	13.036	86.8
15	13.253	94.4
17.5	13.489	88.0
20	13.709	95.2
22.5	13.947	98.4
25	14.193	54.8
27.5	14.330	69.2
30	14.503	69.2
32.5	14.676	54.0
35	14.811	62.0
37.5	14.966	61.2
40	15.119	39.6
42.5	15.218	49.2
45	15.341	64.8
47.5	15.503	50.8
50	15.630	39.6
52.5	15.729	41.6
55	15.833	

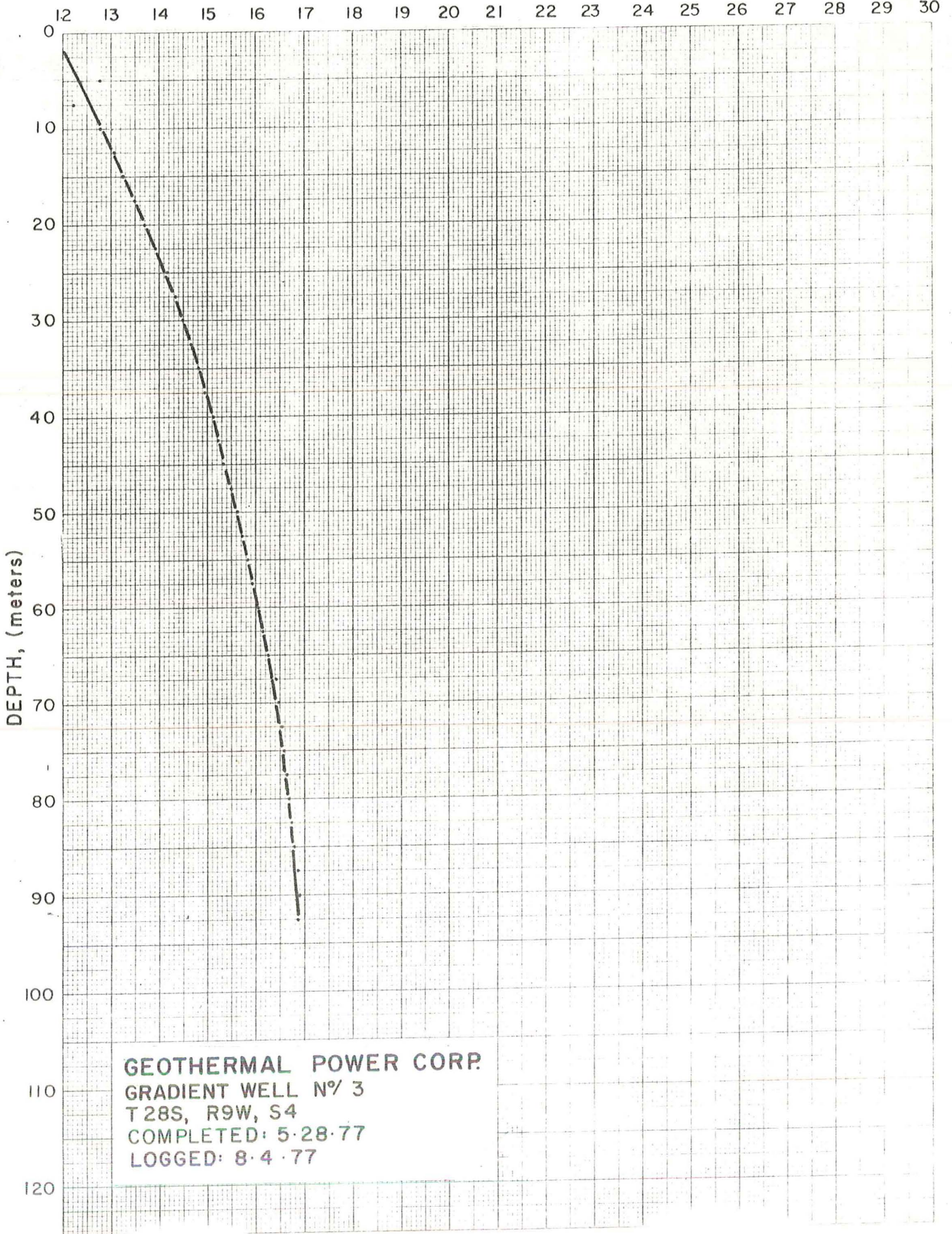
TEMPERATURE-DEPTH LOG

Location: North of Corral Canyon **Tn/Rg/Sec:** 28S-9W-4 bbb NW
Company: Geothermal Power Corporation **Hole Number:** 3
Max. Depth: 91M **Elevation:** 1798M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	15.833	
57.5	15.947	45.6
60	16.058	44.4
62.5	16.178	48.0
65	16.285	42.8
67.5	16.413	51.2
70	16.496	33.2
72.5	16.547	20.4
75	16.587	16.0
77.5	16.633	18.4
80	16.679	18.4
82.5	16.746	26.8
85	16.798	20.8
87.5	16.856	23.2
90	16.909	21.2
91	16.891	(-7.2)

Bottom

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 3
T28S, R9W, S4
COMPLETED: 5-28-77
LOGGED: 8-4-77

HOLE NO. 4

Location: Mouth of Ranch Canyon
 TN-RG-SEC: 27S-9W-33 bab NE
 Company/Owner: Geothermal Power Corporation
 Hole No.: 4
 Total Depth: 300 Ft.
 Date Completed: June 14, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Gravelly sand, minor clay obsidian frags.
20	Same. Minor magnetite.
30	Coarse material. Rhyolite and granitic frags.
40	Same as above.
50	Clayey, fine grained material.
60	Med. pebble gravel to coarse sand. Rhyolite frags and granitic sand angular to subangular grains. Rhyolite 7%.
70	Same. Minor diorite & obsidian frags. Large feld spar grains.
80	Same lithology. Smaller coarse fraction here. Less rhyolite 2%.
90	Same.
100	Same, rhyolite up to 7%.
110	Same. Still angular but better sorting more uniform grain size.
120	Same.
130	Same.
140	Same lithology, finer grained uniform grain sizes.
150	Same

160	Same.
170	Same.
180	Clean, med. sorted sand. Not many fe-mg minerals.
190	Same.
212	Clean, mod. sorted sand, med. to coarse grains.
222	Same.
230	Same. Formation taking a lot of water.
240	Same, slightly coarse material.
250	Fine to coarse sand, obsidian frags.
260	Same, magnetite present.
290	Same.
300	Slightly coarser cuttings, med. sand to small gravel. More obsidian.

TEMPERATURE-DEPTH LOG

Location: Near Mouth of Ranch Canyon **Tn/Rg/Sec:** 28S-9W-33 bab NE
Company: Geothermal Power Corporation **Hole Number:** 4
Max. Depth: 91M **Elevation:** 1804M **Date Logged:** 8-4-77

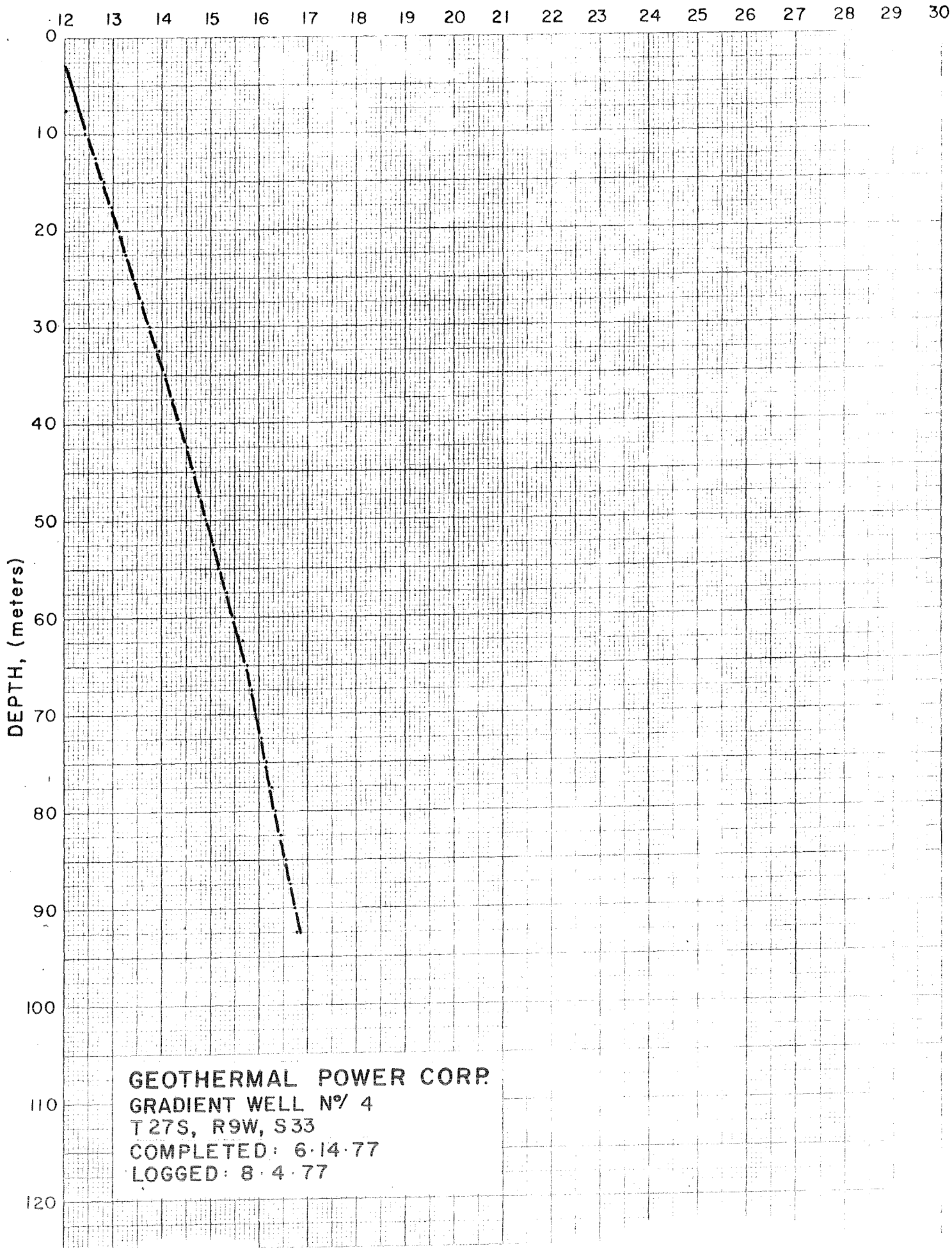
<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	11.427	229.6
7.5	12.011	172.4
10	12.432	82.8
12.5	12.639	72.0
15	12.819	63.2
17.5	12.977	63.6
20	13.136	52.4
22.5	13.267	54.0
25	13.402	76.8
27.5	13.594	64.0
30	13.754	74.4
32.5	13.940	53.6
35	14.074	66.8
37.5	14.241	62.0
40	14.396	54.4
42.5	14.532	55.6
45	14.671	36.4
47.5	14.762	59.6
50	14.911	53.6
52.5	15.045	56.4
55	15.186	

TEMPERATURE-DEPTH LOG

Location: Near Mouth of Ranch Canyon **Tn/Rg/Sec:** 28S-9W-33 bab NE
Company: Geothermal Power Corporation **Hole Number:** 4
Max. Depth: 91M **Elevation:** 1804M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	15.186	65.2
57.5	15.349	61.6
60	15.503	56.4
62.5	15.644	40.4
65	15.745	36.4
67.5	15.836	46.4
70	15.952	38.0
72.5	16.047	48.0
75	16.167	46.4
77.5	16.283	34.0
80	16.368	40.8
82.5	16.470	38.8
85	16.567	36.8
87.5	16.659	42.8
90	16.766	(15.0)
91	16.781	
		Bottom

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 4
T 27S, R9W, S33
COMPLETED: 6-14-77
LOGGED: 8-4-77

HOLE NO. 5

Location: Kirk Spring Canyon
 TN-RG-SEC: 27S-9W-34 bab
 Company/Owner: Geothermal Power Corporation
 Hole No.: 5
 Total Depth: 190 Ft.
 Date Completed: June 10, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Granite and obsidian frags, quartz and feldspar, poorly sorted angular grains.
20	Same.
30	Same.
40	Coarse sand and small gravel. Angular grains of quartz, felds, granite 15%. Hornblende laths present.
50	Same. Magnetite 5%.
60	Minor pumice and rhyolite.
70	Same.
80	Same.
90	Same.
100	Same. Magnetite 5%.
110	Med. sand to small gravel, magnetite, hornblende, qtz., and feld. Definitely hard granite.
120	Granitic cuttings. Very slow drilling, more plagioclase.
130	Many dark grains, metamorphics, biotite and hornblende.

- 140 Metamorphic rock frags. Angular grains, coarse sand to small extremely slow drilling. Samples not washed to preserve fines.
- 150 Lighter material, probably gneissic or granitic.
- 165 Numerous weathered feldspars. May indicate hydrothermal alteration.
- 175 Weathered feldspars - 7-10%.
- 180 Minor magnetite, decomposed felds, hornblende, quartz, granitic quartz 70%, epidote?
- 190 Can't drill anymore due to metal in bottom of hole.

TEMPERATURE-DEPTH LOG

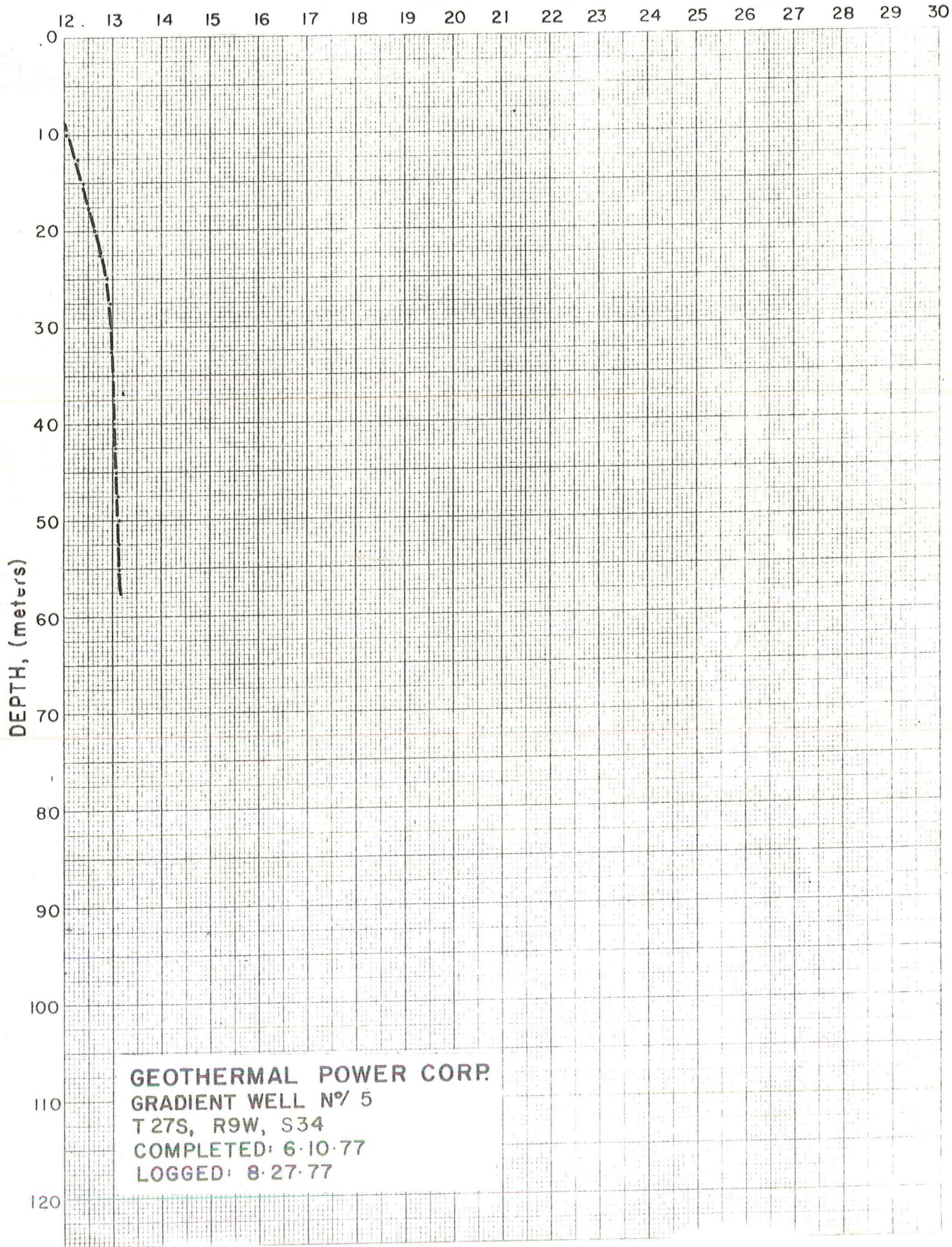
Location: KIRK SPRING CANYON TN-Rg-SEC: 27S-9W-34 bab

Company: GEOTHERMAL POWER CORP. Hole Number: 5

Max.Depth: ~~91M~~ Elevation: 1902M Date Logged: 8-27-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
10	12.061	
12.5	12.295	93.6
15	12.411	46.4
17.5	12.505	37.6
20	12.632	50.8
22.5	12.767	54.0
25	12.880	45.2
27.5	12.960	32.0
30	12.988	11.2
32.5	12.988	0
35	13.003	5.6
37.5	13.026	9.2
40	13.052	10.4
42.5	13.078	10.4
45	13.097	7.6
47.5	13.116	7.6
50	13.138	8.8
52.5	13.152	5.6
55	13.164	4.8
56	13.178	14.0

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 5
T 27S, R9W, S34
COMPLETED: 6-10-77
LOGGED: 8-27-77

HOLE NO. 6

Location: North Ranch Canyon
 TN-RG-SEC: 27S-10W-25 acb SW
 Company/Owner: Geothermal Power Corporation
 Hole No.: 6
 Total Depth: 245 Ft.
 Date Completed: June 1, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Angular to subang grains of poorly sorted quartz, felds, obsidian, granite 7%, frags 2% and biotite, med. to very coarse.
20	Very poorly sorted. Med., sand to med. gravel. Angular grains gravelly rhyolite - 4%, felds, quartz, grantie obsidian, no clay.
30	Same as above. Pumice frags 3%, poorly sorted, med. sand to small gravel. No clay.
40	Same. Med. to gravelly pumice frags 4%.
50	Very poorly sorted, med. sand to med. gravel. Angular to subang. grains. Rhyolite frags (4%) minor clay.
60	Med. sand to very coarse, pumice 2%, rhyolite 5-6%.
70	Med. sand to med. gravel. Very poorly sorted. Rhyolite 6% diorite 3%. No clay. Very angular grains.
80	Same. No diorite.
90	Very poorly sorted. Fine sand to small gravel. Granitic frags 2%.
100	Same.
110	Same. A bit more granite. Diorite 1%.
120	Same. Diorite 2%.
130	Quartz & felds (80%), fe-stained

quartz frags 4%, very angular grains, no clay.

170

Same.

180

Hardrock boulder (granite) cuttings to fine to tell.

190

Same. Coarser cuttings.

200

Same.

212

Same.

222

Same.

245

Same.

TEMPERATURE-DEPTH LOG

Location: NORTH RANCH CANYON TN-Rg-SEC: 27S-10W-25 acbsw

Company: GEOTHERMAL POWER CORP. Hole Number: 6

Max.Depth: 91M Elevation: 1634M Date Logged: 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	13.815	320.8
7.5	14.617	400.0
10	15.617	429.6
12.5	16.691	288.4
15	17.412	364.8
17.5	18.324	241.6
20	18.928	242.8
22.5	19.535	282.8
25	20.242	270.8
27.5	20.919	308.4
30	21.690	211.6
32.5	22.219	292.0
35	22.949	220.8
37.5	23.501	266.0
40	24.166	263.2
42.5	24.824	256.0
45	25.464	202.4
47.5	25.970	177.6
50	26.414	179.2
52.5	26.862	189.6
55	27.336	

TEMPERATURE-DEPTH LOG

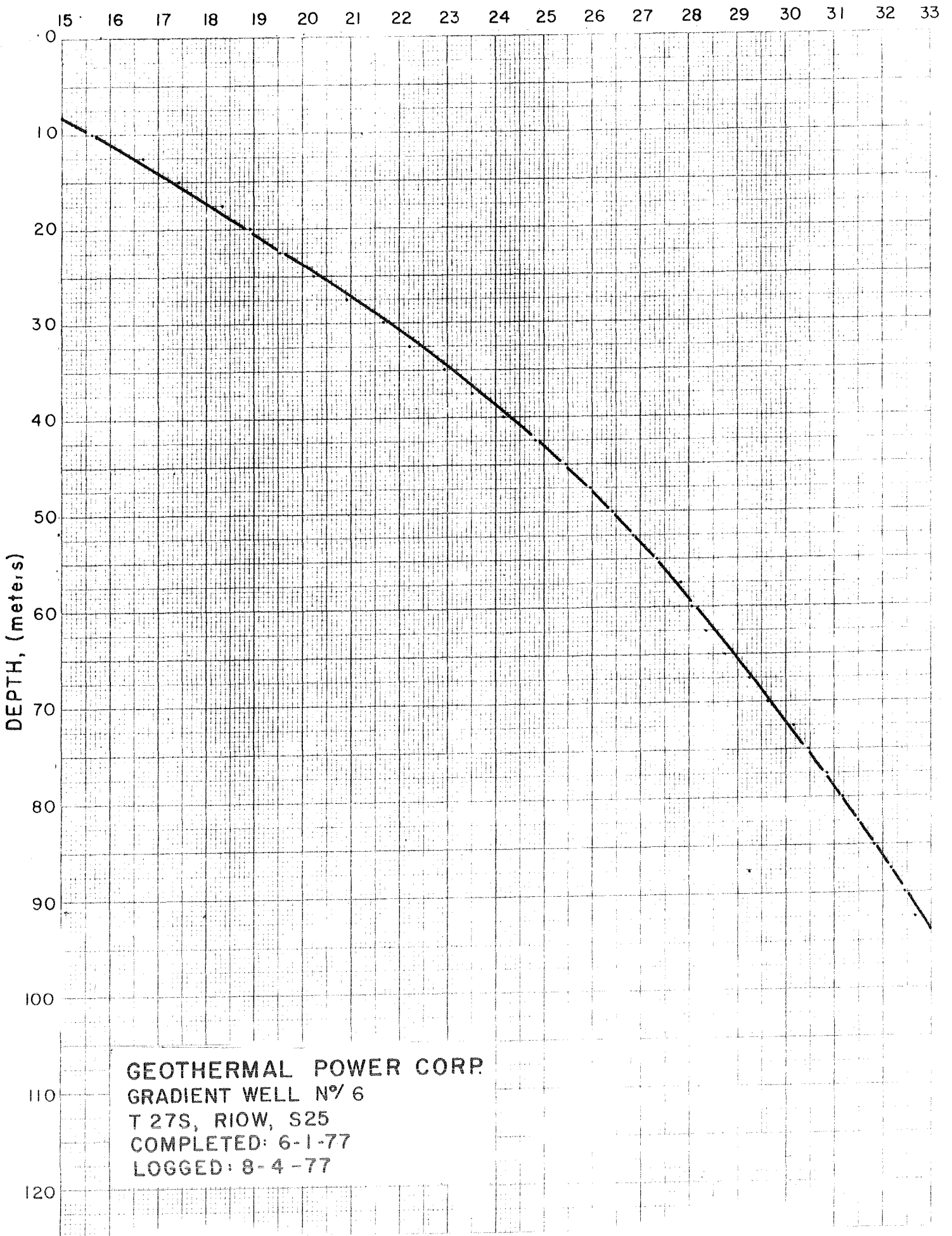
Location: NORTH RANCH CANYON **TN-Rg-SEC:** 27S-10W-25 acbsw

Company: GEOTHERMAL POWER CORP **Hole Number:** 6

Max.Depth: 91M **Elevation:** 163M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	27.336	192.0
57.5	27.816	94.4
60	28.052	108.4
62.5	28.323	174.0
65	28.758	190.8
67.5	29.235	150.8
70	29.612	215.2
72.5	30.150	120.0
75	30.450	162.4
77.5	30.856	131.6
80	31.185	121.6
82.5	31.489	126.0
85	31.804	145.6
87.5	32.168	112.4
90	32.449	(226.0)
91	32.675	

TEMPERATURE, °C



GEOHERMAL POWER CORP.
GRADIENT WELL N° 6
T 27S, RIOW, S25
COMPLETED: 6-1-77
LOGGED: 8-4-77

HOLE NO. 7

Location: Head Big Cedar Cove
 TN-RG-SEC: 27S-9W-13 bcc SE
 Company/Owner: Geothermal Power Corporation
 Hole No.: 7
 Total Depth: 309 Ft.
 Date Completed: June 27, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Quartz, obsidian, felds.
20	Same.
34	Same.
50	Same. Granitic rock frags present.
60	Same.
70	Same.
72	Hardrock, very hard drilling (much slower) no sample taken here yet.
74	Same lithology, but not as fine grained as characteristic hardrock. May be decomposed granite.
80	Same lithology, somewhat clayey, probably decomposed felds.
90	Same. Finer grained. Med. to very coarse, angular sand.
100	Same.
110	Med. to fine granitic sand. Abundant magnetite, and quartz, feldspar, biotite muscovite slow drilling.
122	Same.
132	Same.
145	Same.
155	Same.

165 Same. Numerous orange, hematite stained grains. Clayey, must be decomposed granite.

175 Same.

184 Same. Less magnetite.

195 Fine to very fine granitic material.

210 Same.

225 Fine to coarse sand. Granitic. Much biotite, clayey. Weathered feldspars and limonite and easy drilling suggests drilling in decomposed granite. The granite in the exposed outcrops is highly jointed, suspect that is what is encountered in the subsurface.

235 Minor clay content; probably the weathered feldspars, fine to coarse sand, limonite, stained grains, (5-7%) granitic frags. Biotite flakes up to 2mm dia.

245 Same. More hematite now.

255. Same.

265 Same.

275 Same. Greater coarse fraction in cuttings.

286 Same. Minor magnetite.

290 Drilling markedly slower. Hit hardrock at 292 feet.

295 Fine to med. sand (granitic). Traces of hematite.

300 Same.

309 Same.

TEMPERATURE-DEPTH LOG

Location: HEAD:BIG CEDAR COVE TN-Rg-SEC: 27S-9W-13 bcc SE

Company: GEOTHERMAL POWER CORP. Hole Number: 7

Max.Depth: 94M Elevation: 2213M Date Logged: 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	10.338	106.4
7.5	10.604	128.0
10	10.924	94.4
12.5	11.160	64.4
15	11.321	42.4
17.5	11.427	20.0
20	11.477	14.0
22.5	11.512	14.8
25	11.549	30.0
27.5	11.624	27.2
30	11.692	26.4
32.5	11.758	24.8
35	11.820	29.6
37.5	11.894	29.2
40	11.963	25.2
42.5	12.026	27.6
45	12.095	28.8
47.5	12.167	20.8
50	12.219	18.4
52.5	12.265	29.2
55	12.338	

TEMPERATURE-DEPTH LOG

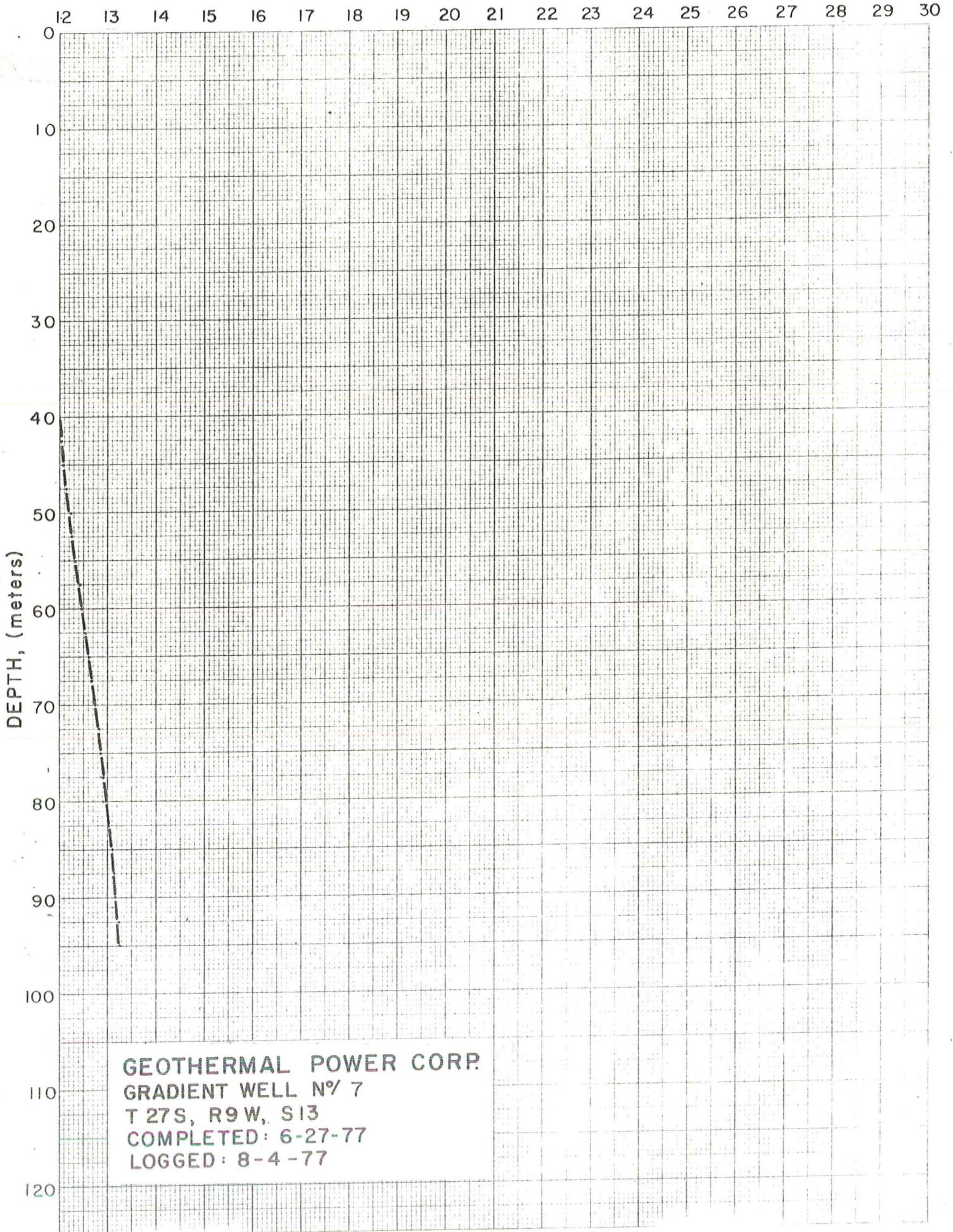
Location: HEAD BIG CEDAR COVE TN-Rg-SEC: 275-9W-13 bcc SE

Company: GEOTHERMAL POWER CORP. **Hole Number:** 7

Max.Depth: 94M **Elevation:** 2213M **Date Logged:** 8-4-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	12.338	26.4
57.5	12.404	29.6
60	12.478	27.6
62.5	12.547	22.0
65	12.602	29.6
67.5	12.676	26.4
70	12.742	26.8
72.5	12.809	21.6
75	12.863	29.2
77.5	12.936	22.0
80	12.991	11.2
82.5	13.014	33.2
85	13.102	16.4
87.5	13.143	9.6
90	13.167	31.6
92.5	13.246	4.7
94	13.253	

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 7
T 27S, R9W, S13
COMPLETED: 6-27-77
LOGGED: 8-4-77

HOLE NO. 8

Location: Head of Salt Cove
 TN-RG-SEC: 26S - 9 W - 25 ccb NE
 Company/Owner: Geothermal Power Corporation
 Hole No.: 8
 Total Depth: 410 Ft.
 Date Completed: July 6, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Coarse sand and gravel, alluvium.
20	Same.
35	Same, harder drilling.
40	Same. Granitic coarse sand, fine gravel, quartz, felds, biotite, muscovite, granitic rock, frags.
50	Same.
60	Same.
70	Same, finer grained, magnetite 3%.
80	Same.
90	Same.
100	Same.
110	Same.
120	Same.
130	Same.
140	Same.
150	Same.
165	Same.
180	Same.
190	Coarser grained material. Sample contains material from upper part of hole.

205	Hard drilling. Back to fine grained cuttings.
210	Same.
220	Same.
230	Same.
240	Same.
250	Same.
260	Same.
270	Same.
280	Same.
290	Same.
300	Same.
310	Same.
320	Same.
330	Same. Hard drilling.
340	Same.
350	Same.
360	Same.
370	Same.
410	Same.

TEMPERATURE-DEPTH LOG

Location: HEAD OF SALT COVE TN-Rg-SEC: 26S-9W-25 ccb NE

Company: GEOTHERMAL POWER CORP. Hole Number: 8

Max.Depth: 125M Elevation: Date Logged: 8-5-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.812	
7.5	13.306	197.6
10	13.663	142.8
12.5	13.867	81.6
15	14.193	130.4
17.5	14.322	51.6
20	14.480	63.2
22.5	14.702	88.8
25	14.906	81.6
27.5	15.103	78.8
30	15.268	66.0
32.5	15.438	68.0
35	15.611	69.2
37.5	15.787	70.4
40	16.002	86.0
42.5	16.145	57.2
45	16.336	76.4
47.5	16.504	67.2
50	16.685	72.4
52.5	16.856	66.0
55	16.999	59.6

TEMPERATURE-DEPTH LOG

Location: HEAD OF SALT COVE **TN-Rg-SEC:** 26S-9W-25 ccb NE

Company: GEOTHERMAL POWER CORP. **Hole Number:** 8

Max.Depth: 125M **Elevation:** **Date Logged:** 8-5-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	16.999	67.2
57.5	17.167	69.2
60	17.340	57.6
62.5	17.484	73.6
65	17.668	71.6
67.5	17.847	64.8
70	18.009	77.2
72.5	18.202	81.6
75	18.406	68.4
77.5	18.577	66.8
80	18.744	73.6
82.5	18.928	83.6
85	19.137	59.2
87.5	19.285	70.8
90	19.462	76.4
92.5	19.653	74.4
95	19.839	63.2
97.5	19.997	77.2
100	20.190	72.4
102.5	20.371	76.0
105	20.561	

TEMPERATURE-DEPTH LOG

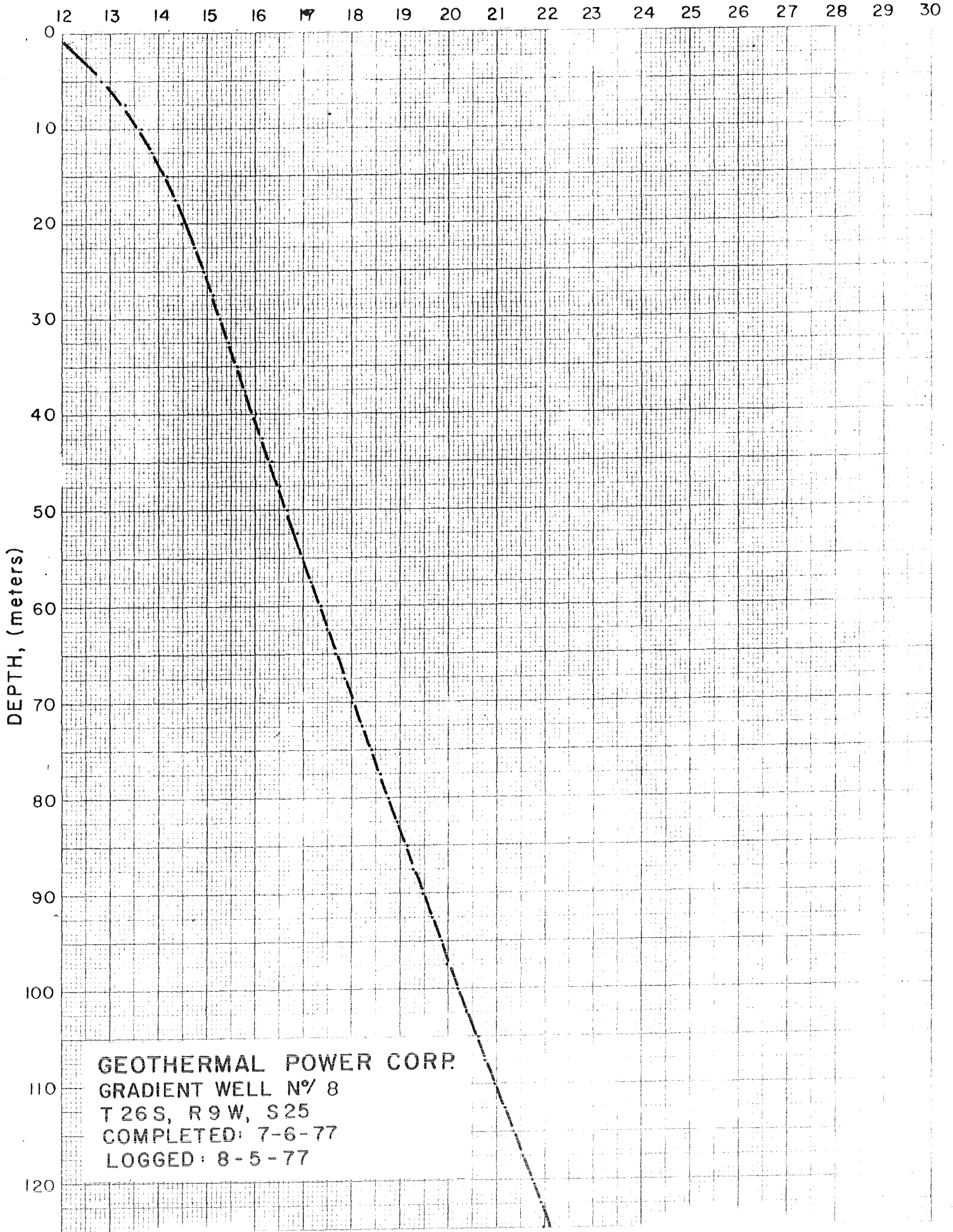
Location: HEAD OF SALT COVE TN-Rg-SEC: 26S-9W-25 ccb NE

Company: GEOTHERMAL POWER CORP. Hole Number: 8

Max.Depth: 125M Elevation: Date Logged: 8-5-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
105	20.561	
107.5	20.750	75.6
110	20.965	86.0
112.5	21.147	72.8
115	21.356	83.6
117.5	21.537	72.4
120	21.728	76.4
122.5	21.902	69.6
124	21.970	45.4

TEMPERATURE, °C



GEOHERMAL POWER CORP.
GRADIENT WELL N° 8
T 26 S, R 9 W, S 25
COMPLETED: 7-6-77
LOGGED: 8-5-77

HOLE NO. 9

Location: Cabin in the Rock
 TN-RG-SEC: 26S-9W-12 cdc SE
 Company/Owner: Geothermal Power Corporation
 Hole No.: 9
 Total Depth: 290 Ft.
 Date Computed: August 2, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Coarse grained granitic material, much biotite.
20	Xenolith material present.
30	Same.
42	Easy drilling, coarse grained material mostly quartz and fragments of xenolith material.
60	Slow-going, hardrock.
72	Med. to coarse granitic material.
82	Same.
92	Same.
110	Same.
120	Slow, hard drilling (3ft. per hr) fine grained materials.
130	Same.
140	Fine grained granitic material, much mica.
150	Same.
160	Same.
180	Drilling 12 ft/hr. Med to fine grained granite. Decomposed felds.
190	Very fine grained material. Much magnetite and micas.

200	Same.
210	Same.
220	Same.
230	Fine granitic cuttings. Magnetite still abundant.
240	Same.
250	Same. Hematite Present (1%)
260	Same.
270	Same.
280	Same.
290	Same drilling, extremely hard.

TEMPERATURE-DEPTH LOG

Location: CABIN IN THE ROCK TN-Rg-SEC: 26S-9W-12 cdc SE

Company: GEOTHERMAL POWER CORP. Hole Number: 9

Max.Depth: 91M Elevation: 1926M Date Logged: 8-5-77

8-27?

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
10	12.998	33.2
12.5	13.081	-20.0
15	13.031	3.6
17.5	13.040	19.2
20	13.088	22.0
22.5	13.143	30.8
25	13.222	37.2
27.5	13.313	52.0
30	13.443	32.0
32.5	13.523	4.0
35	13.533	35.2
37.5	13.621	28.4
40	13.692	25.6
42.5	13.756	23.6
45	13.815	20.0
47.5	13.865	16.8
50	13.907	19.2
52.5	13.955	19.6
55	14.004	21.2
57.5	14.057	21.2
60	14.110	

TEMPERATURE-DEPTH LOG

Location: CABIN IN THE ROCK TN-Rg-SEC: 26S-9W-12 cdc-SE

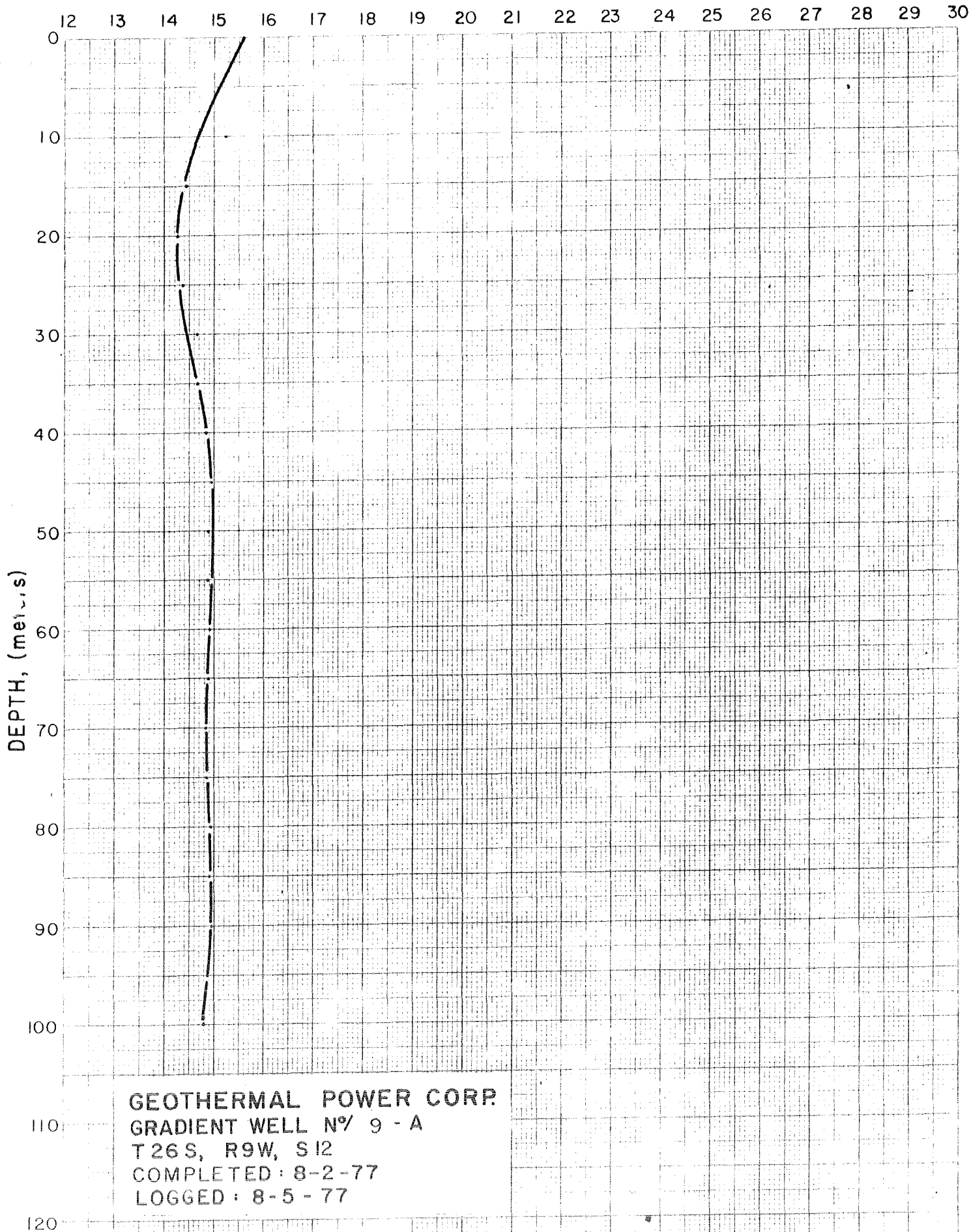
Company: GEOTHERMAL POWER CORP. Hole Number: 9

Max.Depth: 91M Elevation: 1926M Date Logged: 8-5-77

827?

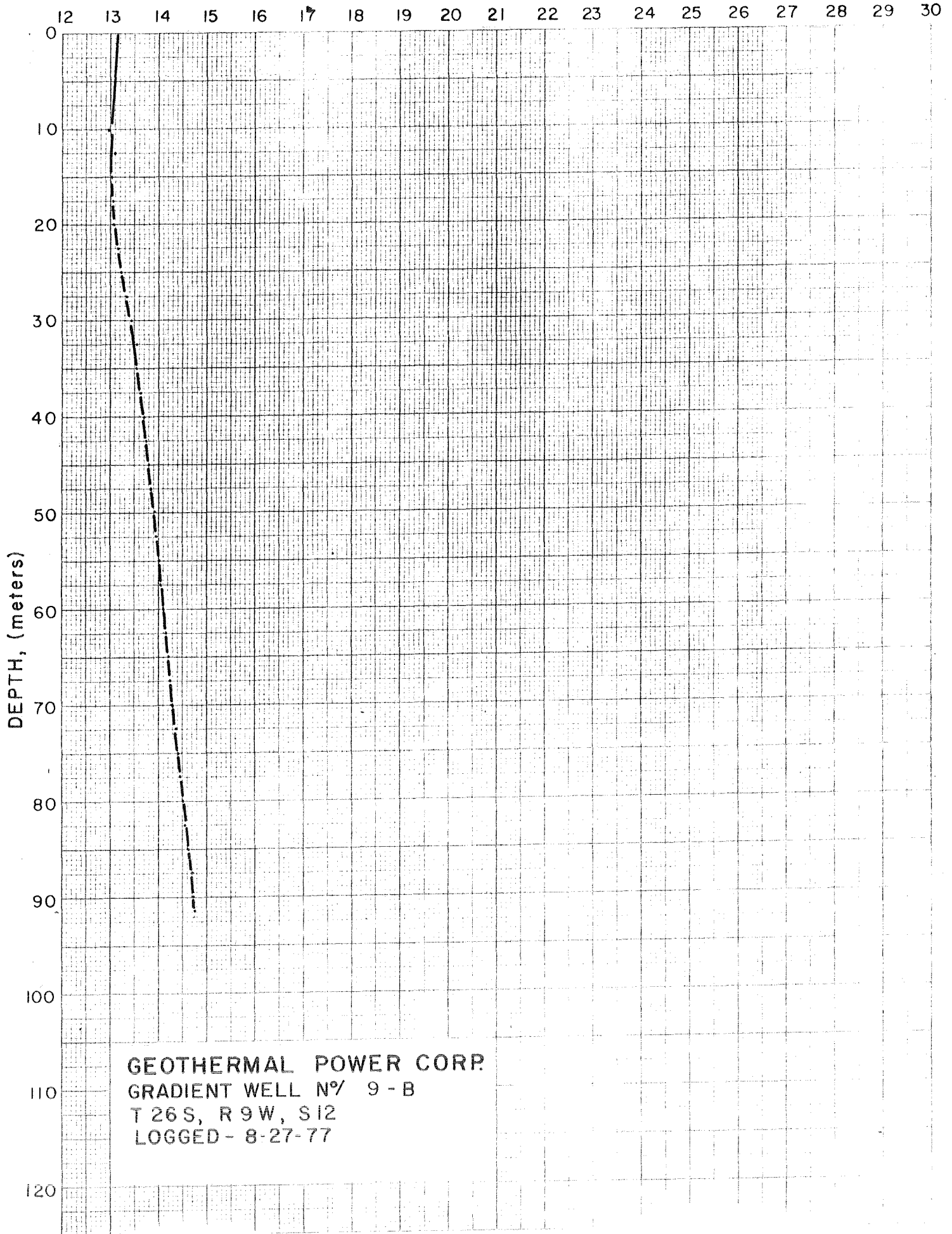
<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
60	14.110	24.0
62.5	14.170	14.0
65	14.205	17.2
67.5	14.248	20.4
70	14.299	22.4
72.5	14.355	19.6
75	14.404	21.2
77.5	14.457	22.8
80	14.514	19.2
82.5	14.562	20.8
85	14.614	21.6
87.5	14.668	15.6
90	14.707	17.3
91.5	14.733	

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL Nº 9 - A
T26 S, R9W, S12
COMPLETED: 8-2-77
LOGGED: 8-5-77

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 9-B
T 26 S, R 9 W, S 12
LOGGED - 8-27-77

HOLE NO. 10

Location: North of Pinnacle Pass
 TH-RG-SEC: 26S-8W-6 cdb NW
 Company/Owner: Geothermal Power Corporation
 Hole No.: 10
 Total Depth: 200 Ft.
 Date Completed: September 9, 1977

DEPTH (FT.)LITHOLOGY

10	Alluvium. Subrounded to angular grains. Granitic rock frags, some rhyolite frags, biotite and muscovite (7%) magnetite. Poorly sorted sand and gravel. Coarse pebble gravel to medium sand. Granite frags. have hornblende phenocryst.
20	Same. Fine pebble gravel to medium sand.
30	Same. Coarse pebble gravel to med. sand sizes. Still alluvium.
40	Med. pebble gravel to med sand.
50	Same.
60	Same.
70	Same. Coarse rhyolite porphyry frags.
80	Same. Coarse dark frags. are highly magnetitic and seems to be part of the granitic rock - maybe as inclusions on high concentrations of ferromags.

TEMPERATURE-DEPTH LOG

Location: NORTH OF PINNACLE PASS **TN-Rg-SEC:** 26S-8W-6 cdb NW
Company: GEOTHERMAL POWER CORP. **Hole Number:** 10
Max.Depth: 61M **Elevation:** 1841 **Date Logged:** 8-30-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.760	
7.5	12.163	-238.8
10	12.632	187.6
12.5	12.936	121.6
15	13.193	102.8
17.5	13.322	51.6
20	13.446	49.6
22.5	13.592	58.4
25	13.744	60.8
27.5	13.900	62.4
30	14.047	58.8
32.5	14.175	51.2
35	14.302	50.8
37.5	14.414	44.8
40	14.493	31.6
42.5	14.581	35.2
45	14.674	37.2
47.5	14.762	35.2
50	14.840	31.2
52.5	14.921	32.4
55	15.021	40.0

TEMPERATURE-DEPTH LOG

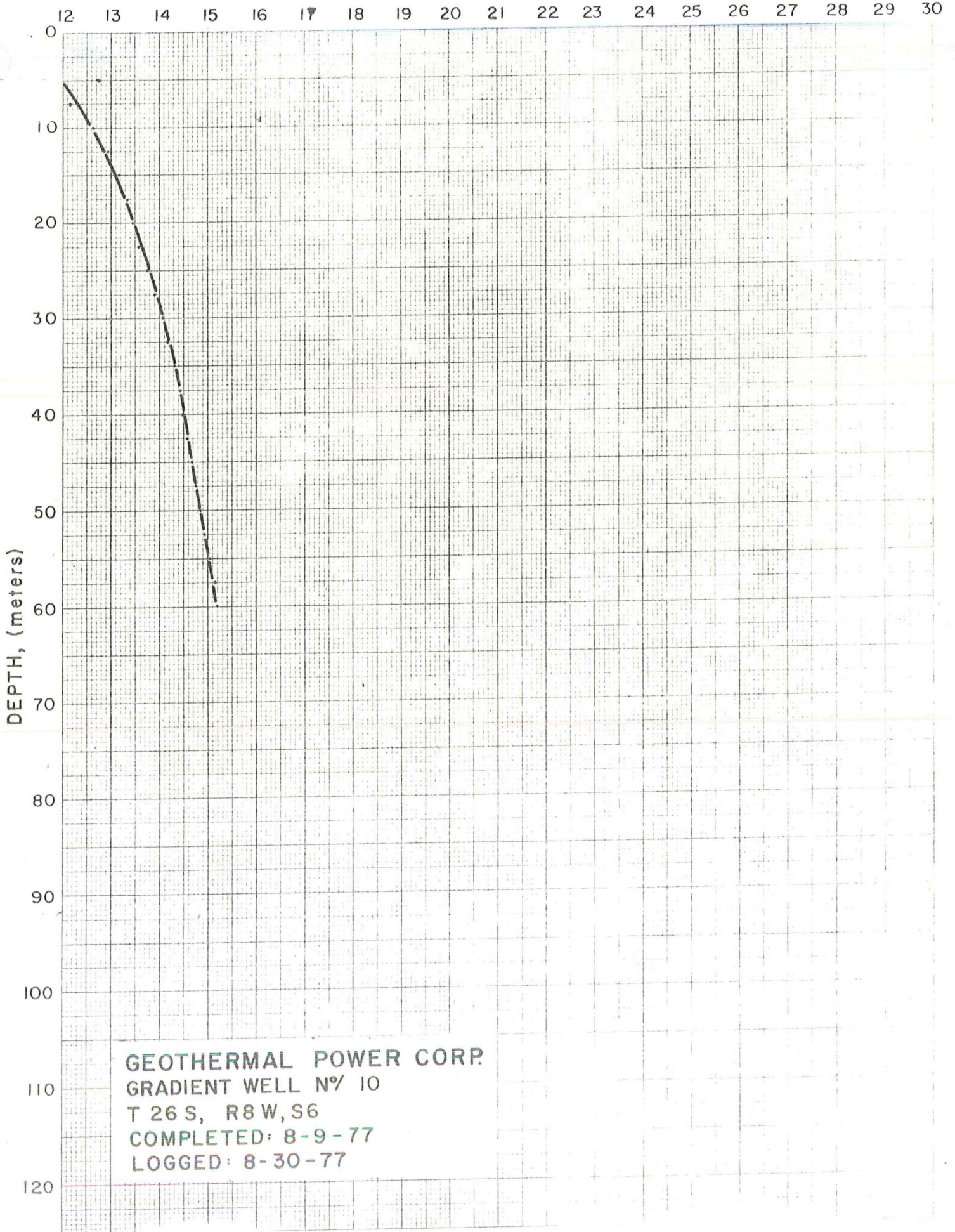
Location: NORTH OF PINNACLE PASS TN-Rg-SEC: 26S-8W-6 cdb NW

Company: GEOTHERMAL POWER CORP. Hole Number: 10

Max.Depth: 61M Elevation: 1841 Date Logged: 8-30-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	15.021	41.6
57.5	15.125	28.4
60	15.196	

TEMPERATURE, °C



GEOHERMAL POWER CORP.
GRADIENT WELL N° 10
T 26 S, R 8 W, S 6
COMPLETED: 8-9-77
LOGGED: 8-30-77

HOLE NO. 11

Location: SW of Pinnacle Pass
TH-RG-SEC: 26N-8W-17 adb center
Company/Owner: Geothermal Power Corporation
Hole No: 11
Total Depth: 112 Ft.
Date Completed: August 5, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10	Coarse poorly sorted alluvial material, quartz, felds, granite and rhyolite frags, rhyolite minor amounts.
20	Same.
30	Coarse material surface. Mostly feldspar and quartz.
40	Same, magnetite 10%.
50	Same.
60	Same.
70	Same.
80	Same. Finer grained plus hematite.
90	Losing circulation periodically. Fine granitic sand, magnetite up to 20%.
110	Basalt (lava) no sample.
112	Lost Circulation.

TEMPERATURE-DEPTH LOG

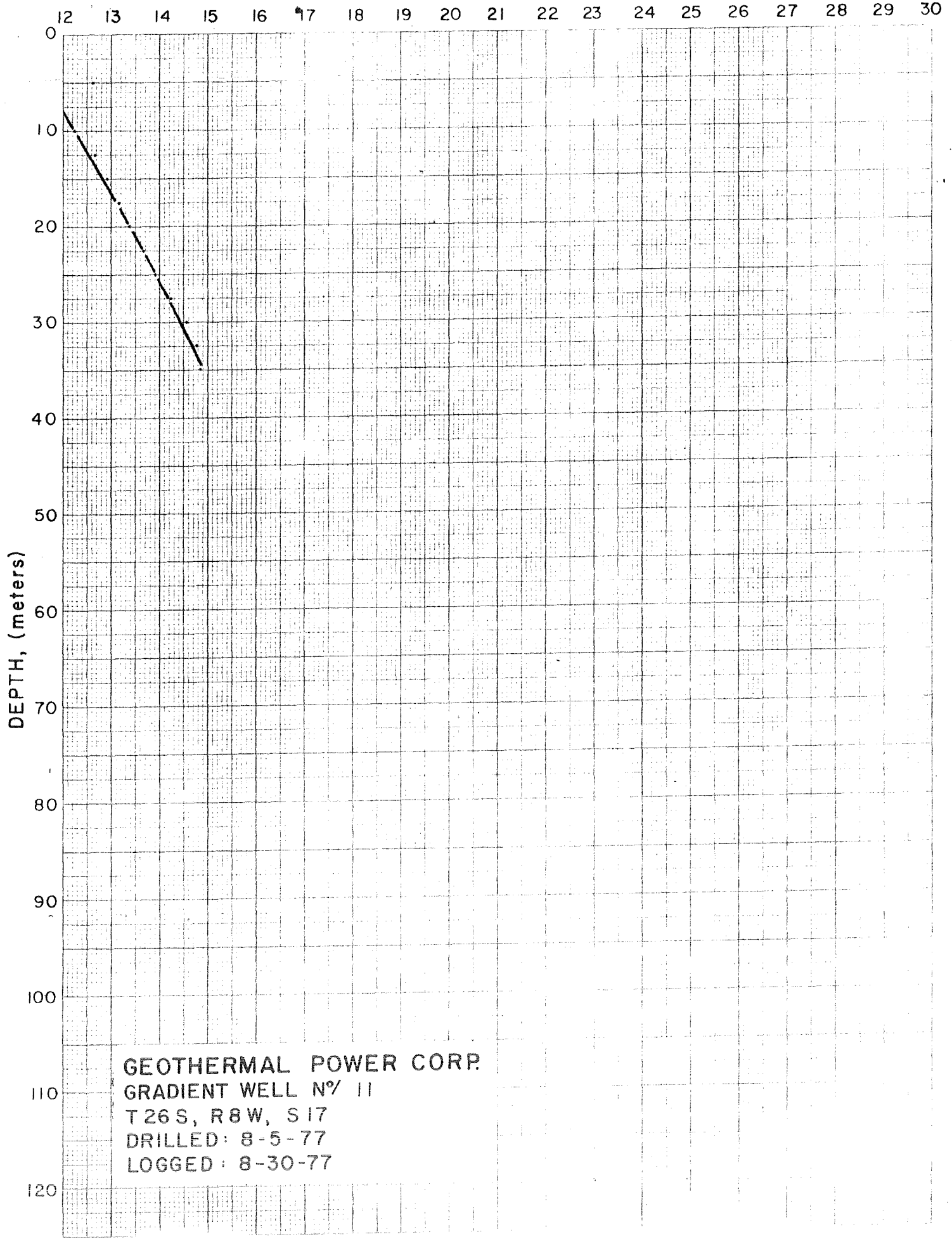
Location: SW OF PINNACLE PASS --TN-Rg-SEC: 26S-8W-17 adb Center

Company: GEOTHERMAL POWER CORP. Hole Number: 11

Max.Depth: 34M Elevation: 1811 Date Logged: 8-30-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	12.625	294.4
7.5	11.889	149.6
10	12.263	169.2
12.5	12.686	98.4
15	12.932	94.8
17.5	13.169	91.2
20	13.397	100.4
22.5	13.648	99.6
25	13.897	128.4
27.5	14.218	140.0
30	14.568	84.8
32.5	14.780	20.7
34	14.811	

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 11
T 26 S, R 8 W, S 17
DRILLED: 8-5-77
LOGGED: 8-30-77

HOLE NO. 12

Location: NE of Water Wash
TN-RG-SEC: 26S-8W-23 aac SW
Company/Owner: Geothermal Power Corporation
Hole No.: 12
Total Depth: 280 Ft.
Date Completed: September 13, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10-40	Silt, alluvium.
50	Coarse pebble gravel to very fine pebble gravel. Grains of quartz, rhyolite, feldspar alluvium.
60-70	Same.
80	Same plus fine pebble gravel-sized basalt fragments.
90-120	Lost circulation, no returns.
120	Basaltic gravel alluvium.
130-180	Same.
180-210	No returns.
210	Same, less basaltic frags.
220-240	No returns
240-260	Same.
280	Same.

TEMPERATURE-DEPTH LOG

Location: NE OF WATER WASH TN-Rg-SEC: 26S-8W-23 dac sw

Company: GEOTHERMAL POWER CORP. Hole Number: 12

Max.Depth: 85M Elevation: Date Logged: 8-29-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	11.261	
7.5	11.578	126.8
10	12.061	193.2
12.5	12.274	85.2
15	12.384	44.0
17.5	12.514	52.0
20	12.758	97.6
22.5	13.033	110.0
25	13.029	-1.6
27.5	12.922	-42.8
30	12.981	-23.6
32.5	13.116	54.0
35	13.193	30.8
37.5	13.438	98.0
40	13.509	28.4
42.5	13.475	-13.6
45	13.460	-6.0
47.5	13.543	33.2
50	13.587	17.6
52.5	13.675	35.2
55	13.798	49.2

TEMPERATURE-DEPTH LOG

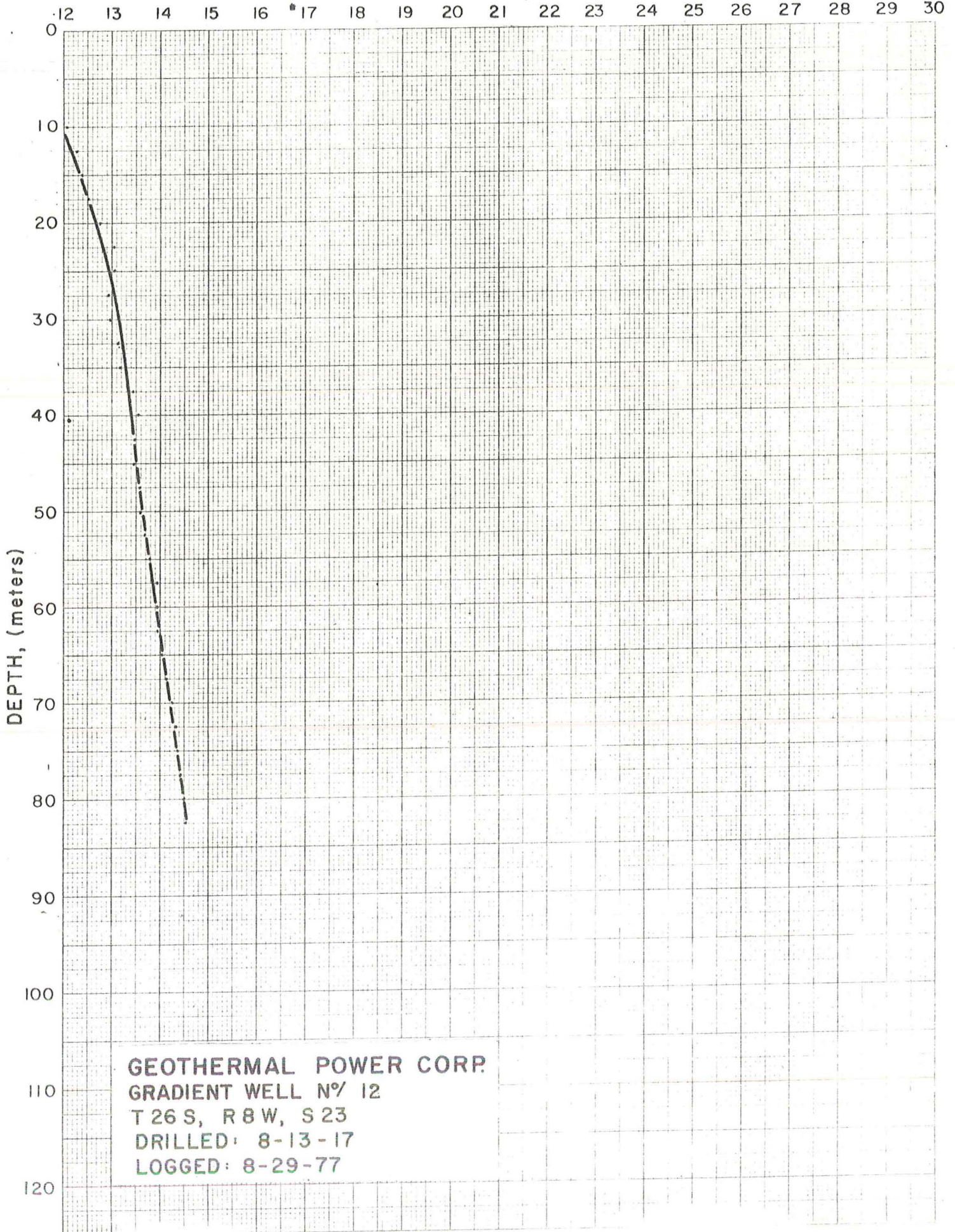
Location: NE OF WATER WASH TN-Rg-SEC: 26S-8W-23 dac sw

Company: GEOTHERMAL POWER CORP. Hole Number: 12

Max.Depth: 85M Elevation: Date Logged: 8-29-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5.5	13.798	
		62.8
57.5	13.955	
		-10.0
60	13.930	
		15.6
62.5	13.969	
		26.0
65	14.034	
		26.4
67.5	14.100	
		54.4
70	14.236	
		30.4
72.5	14.312	
		18.4
75	14.358	
		19.2
77.5	14.406	
		29.6
80	14.480	
		46.0
80.5	14.503	

TEMPERATURE, °C



GEOTHERMAL POWER CORP.
GRADIENT WELL N° 12
T 26 S, R 8 W, S 23
DRILLED: 8-13-17
LOGGED: 8-29-77

HOLE NO. 13

Location: Cunningham Wash
TN-RG-SEC: 27S-8W-22 cac SE
Company/Owner: Geothermal Power Corporation
Hole No.: 13
Total Depth: 240 Ft.
Date Completed: September 13, 1977

<u>DEPTH (FT.)</u>	<u>LITHOLOGY</u>
10-40	Ash and pumice.
40-70	Basalt gravel, some red frags. due to oxidation. Subangular to subrounded grains.
70-110	Hard, solid basalt. Angular grains.
110-200	Alluvial gravel consisting of basalt quartz feldspar and obsidian frags. Angular to subangular grains. Medium to pebble gravel to coarse sand.
190-200	Same lithology but quartz and feldspar are the major constituents.
210-240	Same. Basalt frags oxidized.

TEMPERATURE-DEPTH LOG

Location: CUNINGHAM WASH TN-Rg-SEC: 27S-8W-22 CAC - SE

Company: GEOTHERMAL POWER CORP. **Hole Number:** 13

Max.Depth: 75M **Elevation:** 2103 **Date Logged:** 8-29-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
5	8.586	
7.5	8.666	32.0
10	8.936	108.0
12.5	9.054	47.2
15	9.107	21.2
17.5	9.086	-8.4
20	9.098	4.8
22.5	9.058	-16.0
25	9.109	20.4
27.5	9.470	144.4
30	9.413	-22.8
32.5	9.259	-61.6
35	9.293	13.6
37.5	9.338	18.0
40	9.402	25.6
42.5	9.462	24.0
45	9.468	2.4
47.5	9.491	9.2
50	9.528	14.8
52.5	9.560	12.8
55	9.615	22.0

TEMPERATURE-DEPTH LOG

Location: CUNINGHAM WASH TN-Rg-SEC: 27S-8W-22 CAC - SE

Company: GEOTHERMAL POWER CORP.

Hole Number: 13

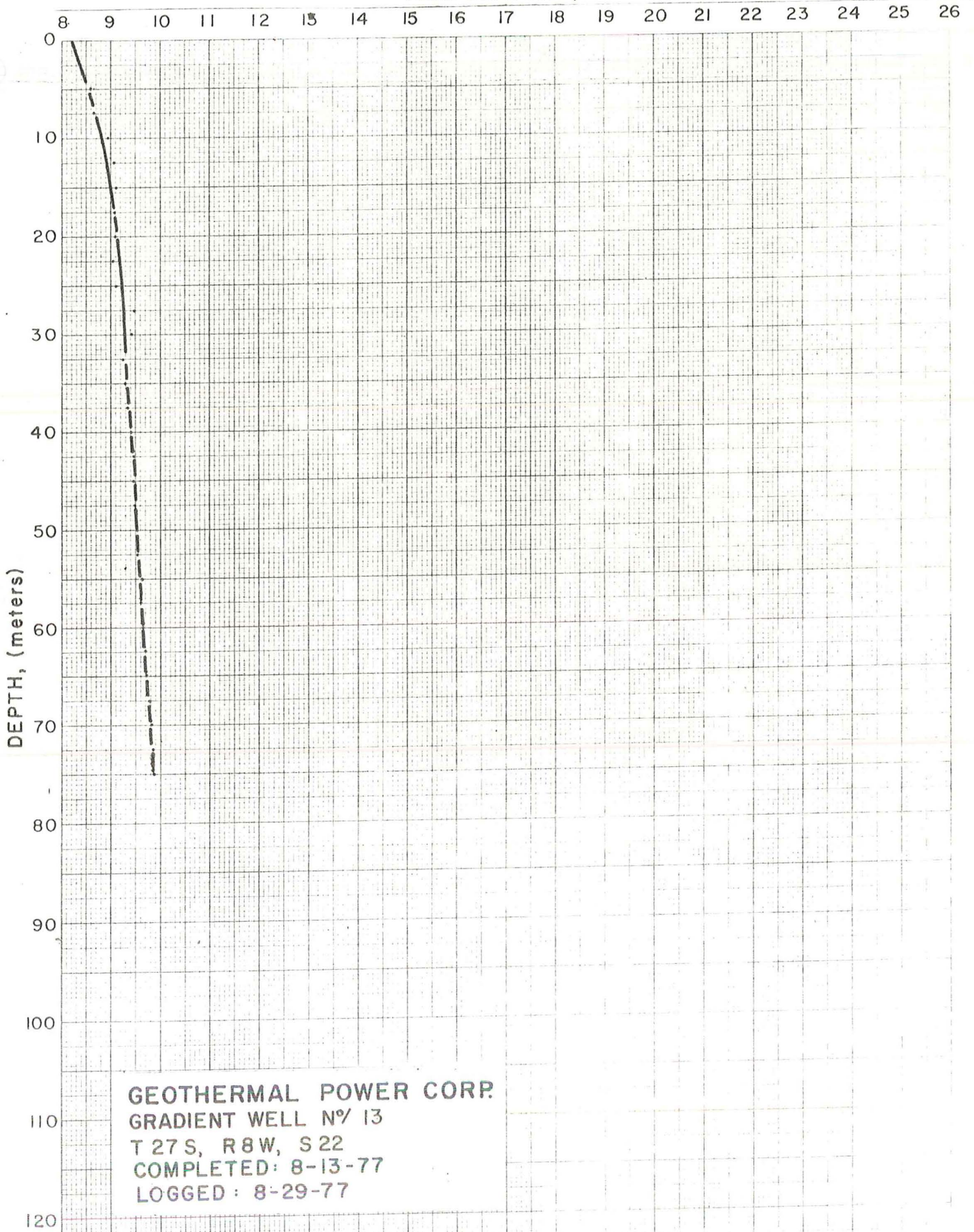
Max.Depth: 75M Elevation: 2103

Date Logged: 8-29-77

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
55	9.615	
57.5	9.613	-0.8
60	9.654	16.4
62.5	9.695	16.4
65	9.733	15.2
67.5	9.774	16.4
70	9.806	12.8
72.5	9.846	16.0
75	9.878	12.8

Bottom

TEMPERATURE, °C



HOLE NO. 14

Location: Power Line Road
 TN-RG-SEC: 27S-9W-18 ddd
 Company/Owner: Geothermal Power Corporation
 Hole No: 14
 Total Depth: 540 Ft.
 Date Completed: December 3, 1977

DEPTHLITHOLOGY

10	Alluvial deposits of angular to sub-angular from very fine grained to approximately 5mm in dia. of weathered feldspars and mica with minor qtz.
20	Alluvial deposits of subangular to subrounded grains of weathered feldspars and mica with minor qtz. from fine to coarse grained
30	Alluvial deposits of sub rounded grains of weathered feldspars and mica with minor qtz. from fine to medium grained.
40	Alluvial deposits of sub rounded grains of weathered feldspars with minor mica and increasing amounts of subangular qtz. approximately 20%.
50	Alluvial deposits of sub rounded grains of weathered feldspars with minor mica and qtz. approximately 10% and minor obsidian chips.
60	Alluvial deposits of subrounded grains of weathered feldspar and mica (biotite & muscovite) with minor qtz. mostly fine to medium grained.
70	Alluvial deposits of subrounded grains of weathered feldspars and mica mostly fine grained with larger grains of subangular qtz.
80	Same as above but with a few pebble sized pieces of a metamorphic rock with ironed stained feromags. and banned obsidian chips.
90	Angular and subangular grains of weathered feldspars with minor mica and qtz. and increasing pumice content with obsidian chips.
100	Same as above but with increasing amount of obsidian chips with fractures.

<u>DEPTH</u>	<u>LITHOLOGY</u>
110	Angular to subrounded grains of feldspars with minor mica of fine to coarse grain: some qtz. but more highly fractured obsidian and pumice.
120	Fine grained pumice with larger grains of angular feldspars with minor mica and little to no qtz. but more obsidian chips.
130	Mostly fine grained pumice with large amount of light obsidian chips. Some subrounded grains of feldspars with minor mica. Large chip of biotite shist.
140	Fine grained pumice with chips of fractured light gray obsidian minor sub rounded feldspar grains with mica.
150	Fine grained pumiceous sands with light and dark obsidian chips minor sub rounded feldspar grains with mica.
160	Change in lithology, coarse angular grains of mostly iron stained feldspars and qtz. with minor biotite and ferro mags.
170	Same as above but fine to medium size grains.
180	Fine to coarse angular grains of feldspar 60%, qtz. 10%, biotite and ferro mags 20%.
190	Same as above but with a few larger chips of a metamorphic rock (gneiss).
200	Same as above.
210	Same as above with increasing amount of ferromagnesians.
220	Medium to coarse angular to subrounded grains of feldspar 60-70%, qtz. 10% ferromags 20%.
230	Same as above.
240	Same as above.
250	Same as above.
260	Fine to coarse angular to subangular grains of feldspar 60%, qtz 10%, ferromags 20-30%.
270	Same as above.

<u>DEPTH</u>	<u>LITHOLOGY</u>
280	Same as above
290	Same as above.
300	Same as above.
310	Fine to coarse angular to sub angular grains of feldspar 50%-60%, qtz. 5%-10%, ferromags 20%-30%.
320	Same as above but with large chip of qtz. diorite rock and large chip of a light gray aphanitic volcanic rock.
330	Same as above
340	Same as above.
350	Same as above.
360	Same as above.
370	Same as above.
380	Same as above.
390	Same as above but mostly fine angular grain sizes with small chips of light gray aphanitic rock.
400	Same as above.
410	Fine to medium angular to subangular grains of feldspars 40-50%, little or no quartz and ferromags 40-50%.
420	Same as above with more feldspars 50-60%, qtz. 5-10% and ferromags 30-40%.
430	Same as above.
440	Same as above.
450	Same as above.
460	Same as above.
470	No Sample
480	No sample
490	No Sample

DEPTHLITHOLOGY

500		Fine to medium, angular to subangular grains of feldspar 50-60% qtz less than 10% and ferromags 30-40% with a large chip of quartz diorite.
510		Same as above.
520		Same as above.
530		Same as above.
540	Bottom Hole	Same as above.

TEMPERATURE-DEPTH LOG

Location: POWER LINE ROAD TN-Rg-SEC: 27S-9W-18 ddd

Company: GEOTHERMAL POWER CORP. **Hole Number:** 14

Max.Depth: 162M **Elevation:** **Date Logged:** 1-5-78

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
2.5	14.291	
		328.0
5	15.111	
		138.8
7.5	15.458	
		230.8
10	16.035	
		206.0
12.5	16.550	
		210.8
15	17.077	
		259.6
17.5	17.726	
		304.0
20	18.486	
		298.8
22.5	19.233	
		272.8
25.0	19.915	
		226.0
27.5	20.480	
		222.8
30	21.037	
		202.4
32.5	21.543	
		204.8
35	22.055	
		195.2
37.5	22.543	
		201.6
40	23.047	
		156.8
42.5	23.439	
		174.4
45	23.875	
		204.4
47.5	24.386	
		221.6
50	24.940	
		146.8
52.5	25.307	

TEMPERATURE-DEPTH LOG

Location: POWER LINE ROAD TN-Rg-SEC: 27S-9W-18 ddd

Company: GEOTHERMAL POWER CORP.

Hole Number: 14

Max.Depth: 162M Elevation:

Date Logged: 1-5-78

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
52.5	25.307	209.2
55	25.830	144.4
57.5	26.191	150.8
60	26.568	192.8
62.5	27.050	155.2
65	27.438	135.2
67.5	27.776	226.8
70	28.343	86.8
72.5	28.560	138.8
75	28.907	218.8
77.5	29.454	89.2
80	29.677	225.2
82.5	30.240	141.6
85	30.594	85.6
87.5	30.808	141.2
90	31.161	197.6
92.5	31.655	108.8
95	31.927	151.6
97.5	32.306	174.0
100	32.741	92.4
102.5	32.972	

TEMPERATURE-DEPTH LOG

Location: POWER LINE ROAD TN-Rg-SEC: 27S-9W-18 ddd

Company: GEOTHERMAL POWER CORP.

Hole Number: 14

Max.Depth: 162M Elevation:

Date Logged: 1-5-78

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
102.5	32.972	100.8
105	33.224	231.2
107.5	33.802	102.4
110	34.058	141.2
112.5	34.411	201.2
115	34.914	77.2
117.5	35.107	142.8
120	35.464	145.2
122.5	35.827	150.8
125	36.204	141.2
127.5	36.557	107.6
130	36.826	179.6
132.5	37.275	136.4
135	37.616	94.4
137.5	37.852	127.2
140	38.170	-70.4
142.5	37.994	294.4
145	38.730	149.6
147.50	39.104	118.0
150	39.399	112.8
152.5	39.681	

TEMPERATURE-DEPTH LOG

Location: POWER LINE ROAD **TN-Rg-SEC:** 27S-9W-18 ddd

Company: GEOTHERMAL POWER CORP. **Hole Number:** 14

Max.Depth: 162M **Elevation:** **Date Logged:** 1-5-78

<u>Depth Meters</u>	<u>Temperature °C</u>	<u>Temperature Gradient °C/km</u>
152.5	39.681	
		131.6
155	40.010	
		126.8
157.5	40.327	
		193.6
160	40.811	
		83.6
162.5	41.020	

