

UNOCAL SUBSURFACE SURVEY

<b>FIELD</b>	Glass Mountain					<b>Well Name</b>	GMFU 87-13				
<b>Casing</b>	7"	660 to 2356				<b>Date</b>	7/21/92				
						<b>Zero Point</b>	Swab Gate				
<b>Liner Description</b>	4.5" 2158 to 3010					<b>Depth</b>	5935				
	3.5" 2950 to 5935					<b>Elevation</b>	6697				
<b>Remarks</b>	Fluid Level at ± 760 ft. stops at: 2570, 4000, 5800 ± 10 min.										
<b>Purpose</b>	Temperature gradient traverse										
<b>Element</b>	temp 1	<b>Serial #</b>	K 2051	<b>Clock</b>	k 3057	<b>Well head Press.</b>	0				
<b>Element</b>	temp 2	<b>Serial #</b>	Sandia	<b>Clock</b>	Electronic	<b>Pickup Depth</b>	n.a.				
<b>Element</b>		<b>Serial #</b>		<b>Clock</b>		<b>Last Depth</b>	5866				
<b>1. Engage Stylus</b>	8:41	<b>1. Disengage Stylus</b>	13:00								
<b>2. Engage Stylus</b>		<b>2. Disengage Stylus</b>									
<b>3. Engage Stylus</b>		<b>3. Disengage Stylus</b>		<b>Max. Temp (MRT)</b>							
<b>Well Status</b>	Static					<b>open swab gate</b>	9:00				
<b>injection rate</b>						<b>time on bottom</b>	12:16				
<b>production rate</b>						<b>time off bottom</b>	12:33				
<b>shut in</b>	10/23/91					<b>close swab gate</b>	12:50				
	<b>k 2051</b>					<b>Sandia</b>					
<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>		
906	1000	0.566	222					251			
916	1200	0.946	325					312			
926	1400	1.145	379					364			
931	1500	1.18	388					386			
936	1600	1.173	386					395			
946	1800	1.347	433					402			
956	2000	1.479	468					459			
1006	2200	1.508	476					476			
1016	2400	1.531	482					481			
1025 - 35	2570	1.534	483					486			
1036	2600	1.535	483					486			
1046	2800	1.541	484					487			
1056	3000	1.549	487					490			
1101	3200	1.559	489					493			
1106	3400	1.568	492					495			
1111	3600	1.577	494					497			
1116	3800	1.587	497					500			
1121 - 31	4000	1.6	500					504			
1136	4200	1.62	506					507			
1141	4400	1.637	510					511			
1146	4600	1.654	515					515			
1151	4800	1.667	519					518			
1156	5000	1.683	523					521			
1201	5200	1.7	528					526			

Well 87-13

TELEPHONE FLATS

- Subsurface Temp Survey
- Post flow Temp
- Flowing TP
- Winter Temp
- Post injection Temp
- Pre injection Temp
- Pre flow Temp

1206	5400	1.716	532					530	
1211	5600	1.731	536					533	
1216 - 33	5800	1.741	539					537	












UNOCAL SUBSURFACE SURVEY

<b>FIELD</b>	Glass Mountain				<b>Well Name</b>	GMFU 87-13				
<b>Casing</b>	7"	660 to 2356			<b>Date</b>	10/13/91				
					<b>Zero Point</b>	Swab Gate				
<b>Liner Description</b>	4.5" 2158 to 3010				<b>Depth</b>	5935				
	3.5" 2950 to 5935				<b>Elevation</b>	6697				
<b>Remarks</b>	Tools run on Cal Steam Cap Tubing (pressure on seperate record)									
<b>Purpose</b>	Flowing Temperature and Pressure gradient survey									
<b>Element</b>	temp	<b>Serial #</b>	10172	<b>Clock</b>	<b>Well head Press.</b>					
<b>Element</b>		<b>Serial #</b>		<b>Clock</b>	<b>Pickup Depth</b>					
<b>Element</b>		<b>Serial #</b>		<b>Clock</b>	<b>Last Depth</b>				5910	
<b>1. Engage Stylus</b>	13:23	<b>1. Disengage Stylus</b>			17:19					
<b>2. Engage Stylus</b>		<b>2. Disengage Stylus</b>								
<b>3. Engage Stylus</b>		<b>3. Disengage Stylus</b>			<b>Max. Temp (MRT)</b>					
<b>Well Status</b>	Flowing				<b>open swab gate</b>					
<b>injection rate</b>					<b>time on bottom</b>				14:22	
<b>production rate</b>					<b>time off bottom</b>				17:04	
<b>shut in</b>	4:23:00 PM on 10/13/91				<b>close swab gate</b>					
<b>temp</b>										
<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	
1422-38	5500	1.249	540.1							
40 - 46	5000	1.212	528.2							
47 - 55	4500	1.145	522.8							
56 - 04	4010	1.158	510.9							
1505 - 12	3500	1.115	497							
14 - 21	3000	1.081	486							
23 - 30	2500	1.064	480.5							
32 - 41	2000	0.997	458.8							
44 - 49	1500	0.953	444.6							
51 - 58	1000	0.899	427							
Flowing 1604	2600	1.06	479.2							
Shut in	2600	1.063	480.2							

Survey by:






UNOCAL SUBSURFACE SURVEY

<b>FIELD</b>		Glass Mountain				<b>Well Name</b>		GMFU 87-13	
<b>Casing</b>	7"	660 to 2356				<b>Date</b>	2/26/92		
						<b>Zero Point</b>	Swab Gate		
<b>Liner Description</b>	4.5" 2158 to 3010				<b>Depth</b>	5935			
						<b>Elevation</b>	6697		
<b>Remarks</b>									
<b>Purpose</b> Mid - Winter Gradient survey									
<b>Element</b>	T	<b>Serial #</b>	10172	<b>Clock</b>	K 3057	<b>Well head Press.</b>	0		
<b>Element</b>	T	<b>Serial #</b>	K 2051	<b>Clock</b>	K 1746	<b>Pickup Depth</b>	NA		
<b>Element</b>	P	<b>Serial #</b>	K 3582	<b>Clock</b>	K 3046	<b>Last Depth</b>	5866		
<b>1. Engage Stylus</b> 10:17 <b>1. Disengage Stylus</b> 15:28									
<b>2. Engage Stylus</b> 10:17 <b>2. Disengage Stylus</b> 15:28									
<b>3. Engage Stylus</b> 14:45 <b>3. Disengage Stylus</b> 16:09 <b>Max. Temp (MRT)</b> NA									
<b>Well Status</b> Static						<b>open swab gate</b>	10:29		
<b>injection rate</b>						<b>time on bottom</b>	14:31		
<b>production rate</b>						<b>time off bottom</b>	14:53		
<b>shut in</b> 10/23/91						<b>close swab gate</b>	15:09		
<b>TEMP 10172</b>					<b>TEMP K 2051</b>				
<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>
1033-53	1000	0.384	253			1000	0.655	246	
54-1104	1500	0.76	383			1500	1.123	373	
1105-12	1600	0.789	393			1600	1.179	388	
13-21	1700	0.757	382			1700	1.146	379	
22-32	2000	0.935	441			2000	1.355	435	
35-45	2250	1.038	474			2250	1.482	469	
46-56	2500	1.052	479			2500	1.502	474	
57-1205	2600	1.061	482			2600	1.511	476	
1206-13	2700	1.064	483			2700	1.514	477	
14-21	2800	1.066	483			2800	1.516	478	
21-28	2900	1.071	485			2900	1.52	479	
28-36	3000	1.084	489			3000	1.538	484	
37-46	3100	1.087	490			3100	1.542	485	
47-58	3250	1.093	492			3250	1.548	486	
59-1309	3500	1.102	495			3500	1.558	489	
1309-16	3600	1.107	496			3600	1.563	490	
17-25	3700	1.111	498			3700	1.569	492	
25-32	3800	1.116	499			3800	1.574	493	
33-40	3900	1.123	502			3900	1.581	495	
40-47	4000	1.128	503			4000	1.589	497	
48-58	4500	1.167	516			4500	1.633	509	
59-1409	5000	1.201	527			5000	1.672	520	
1413-29	5500	1.239	539			5500	1.716	532	
1431-53	5860	1.263	546			5860	1.743	540	



		Pressure	K 3582						
1525-34	1200		175						
35-41	1500		288						
42-47	1800		409						
47-52	2000		485						





















Calpine CD

UNOCAL SUBSURFACE SURVEY

<b>FIELD</b>	Glass Mountain					<b>Well Name</b>	GMFU 87-13			
<b>Casing</b>	7"	660 to 2356				<b>Date</b>	10/15/91			
						<b>Zero Point</b>	Swab Gate			
<b>Liner Description</b>	4.5" 2158 to 3010					<b>Depth</b>	5935			
	3.5" 2950 to 5935					<b>Elevation</b>	6697			
<b>Remarks</b>										
<b>Purpose</b>	Post Injection Temperature Gradient with Traverse									
<b>Element</b>	temp	<b>Serial #</b>	10172	<b>Clock</b>	K 1746	<b>Well head Press.</b>				
<b>Element</b>	temp	<b>Serial #</b>	K 2051	<b>Clock</b>	K 3057	<b>Pickup Depth</b> 5875				
<b>Element</b>		<b>Serial #</b>		<b>Clock</b>		<b>Last Depth</b> 5910 10/1				
<b>1. Engage Stylus</b>	11:10	<b>1. Disengage Stylus</b>			15:49					
<b>2. Engage Stylus</b>	11:16	<b>2. Disengage Stylus</b>			15:45					
<b>3. Engage Stylus</b>		<b>3. Disengage Stylus</b>				<b>Max. Temp (MRT)</b>				
<b>Well Status</b>	Static					<b>open swab gate</b>				
<b>injection rate</b>						<b>time on bottom</b> 15:16				
<b>production rate</b>						<b>time off bottom</b> 15:27				
<b>shut in</b>	10/14/91					<b>close swab gate</b>				
	<b>10172</b>					<b>k 2051</b>				
<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	<b>time</b>	<b>depth</b>	<b>deflection</b>	<b>p/t</b>	<b>gradient</b>	
1141 - 58	2000	0.68	356		357					
1200 - 10	2500	0.843	408.9		408					
1210 - 20	2600	0.835	406.3		407					
20 - 30	2800	0.828	404		405					
32 - 45	3000	0.827	403.7		404					
46 - 1300	3100	0.84	407.9		408					
1305	3200	0.845	409.5							
10	3300	0.86	414.4							
15	3400	0.876	419.6							
20	3500	0.894	425.4							
25 - 30	3600	0.916	432.6		432					
35	3700	0.925	435.5							
40	3800	0.938	439.7							
45	3900	0.951	443.9							
50	4000	0.966	448.8							
55 - 1400	4100	0.989	456.2		456					
1405	4200	0.998	459.2							
10	4300	1.013	464							
15	4400	1.03	469.5							
20	4500	1.045	474.4							
25	4600	1.06	479.2							
30 - 45	4700	1.084	487		487					
1446 - 1501	4993	1.124	499.9		499					
1502 - 14	5500	1.224	532.1		532					



16 - 27	5874	1.272	547.4		547				



















# GM68-8 PT. DAT

PT TOOL DATA FILE SERIAL # V2\_2

Log Date: 10-20-98

CT Tool Started at --- 10:28:05

EncoderStart Point--- 10:48:36, 0, 0,0.0

Depth Ft,Rate, Enc. Sec, TT(SEC),PRESSPSIA,EXTEMPDEGC,INTERNAL  
TEMP,PTEMPC,BAT VOLTS

0.00	0.00	1.00	1232	13.07	12.264	0.
0.00	0.00	3.00	1234	13.07	12.248	0.
0.00	0.00	5.00	1236	13.08	12.232	0.
0.00	0.00	7.00	1238	13.07	12.218	0.
0.00	0.00	9.00	1240	13.07	12.206	0.
0.00	0.00	11.00	1242	13.07	12.193	0.
0.00	0.00	13.00	1244	13.07	12.183	0.
0.00	0.00	15.00	1246	13.07	12.172	0.
0.00	0.00	17.00	1248	13.07	12.163	0.
0.00	0.00	19.00	1250	13.07	12.155	0.
0.00	0.00	21.00	1252	13.07	12.149	0.
0.00	0.00	23.00	1254	13.07	12.143	0.
0.00	0.00	25.00	1256	13.07	12.139	0.
0.00	0.00	27.00	1258	13.07	12.132	0.
0.00	0.00	29.00	1260	13.07	12.128	0., 19.9, 17.7, 14.2
16.05	963.00	31.00	1262	13.07	12.123	0.
32.10	0.00	33.00	1264	13.07	12.119	0.
32.10	0.00	35.00	1266	13.07	12.116	0.
32.10	0.00	37.00	1268	13.07	12.112	0.
32.10	0.00	39.00	1270	13.07	12.110	0.
32.10	0.00	41.00	1272	13.07	12.104	0.
32.10	0.00	43.00	1274	13.07	12.099	0.
32.10	0.00	45.00	1276	13.07	12.095	0.
32.10	0.00	47.00	1278	13.07	12.089	0.
32.10	0.00	49.00	1280	13.07	12.083	0.
32.10	0.00	51.00	1282	13.07	12.076	0.
32.10	0.00	53.00	1284	13.07	12.070	0.
32.10	0.00	55.00	1286	13.06	12.064	0.
32.15	3.00	57.00	1288	13.07	12.059	0.
32.30	6.00	59.00	1290	13.07	12.051	0., 20.0, 17.7, 14.2
33.00	36.00	61.00	1292	13.06	12.045	0.
34.25	39.00	63.00	1294	13.06	12.035	0.
35.55	39.00	65.00	1296	13.06	12.028	0.
36.80	36.00	67.00	1298	13.06	12.020	0.
38.00	36.00	69.00	1300	13.06	12.017	0.
39.20	36.00	71.00	1302	13.06	12.015	0.
40.40	36.00	73.00	1304	13.07	12.014	0.
41.55	33.00	75.00	1306	13.06	12.007	0.

WELL 68-8  
TELEPHONE FLAT  
- PT TOOL DATA - TEMP V Depth  
- Subsurface Temp Survey (blank)  
no data

THE 198-83116








