



Directional Survey Report

Well ID: Negu 13 CTI

Field: Geysers

Calpine Corp

Well Name: Negu 13 CTI

Sect: 8 Town: T11N Rng: R8W County: Lake State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
Well Bore: Original Well Bore				Plane of Vertical Section: 49.76					
MSS	0.0	0.00	0	0.0	0.0	0.0	0.0	0.0	0.000
MSS	16.5	100.00							
MSS	226.4	0.75	71	226.4	0.5	1.4	1.5	1.4	0.331
MSS	360.9	0.75	178	360.9	-0.1	2.3	2.3	1.7	0.896
MSS	534.0	1.00	146	534.0	-2.5	3.1	4.0	0.8	0.311
MSS	672.6	1.25	117	672.5	-4.2	5.2	6.7	1.2	0.442
MSS	761.2	1.25	176	761.1	-5.6	6.1	8.3	1.0	1.390
MSS	918.6	1.25	176	918.5	-9.0	6.3	11.0	-1.0	0.000
MSS	1,069.6	1.75	209	1,069.4	-12.7	5.3	13.7	-4.1	0.648
MSS	1,131.9	1.25	204	1,131.7	-14.1	4.6	14.9	-5.6	0.828
MSS	1,243.4	2.00	191	1,243.2	-17.1	3.7	17.5	-8.2	0.745
MSS	1,397.6	3.00	218	1,397.3	-23.0	0.7	23.0	-14.3	0.985
MSS	1,489.5	4.00	195	1,489.0	-28.0	-1.6	28.0	-19.3	1.856
MSS	1,591.2	5.00	203	1,590.4	-35.5	-4.2	35.7	-26.1	1.159
MSS	1,650.3	5.75	177	1,649.2	-40.8	-5.1	41.1	-30.2	4.273
MSS	1,683.1	5.75	159	1,681.8	-44.0	-4.4	44.2	-31.8	5.474
MSS	1,715.9	5.75	144	1,714.4	-46.8	-2.8	46.9	-32.4	4.567
MSS	1,824.2	7.25	111	1,822.1	-53.7	6.7	54.1	-29.5	3.654
MSS	1,889.8	7.00	111	1,887.2	-56.6	14.3	58.4	-25.6	0.381
MSS	2,011.2	8.50	121	2,007.4	-63.9	28.9	70.1	-19.2	1.657
MSS	2,135.8	8.25	125	2,130.8	-73.7	44.1	85.9	-13.9	0.508
MSS	2,257.2	8.00	131	2,251.0	-84.3	57.7	102.1	-10.4	0.728
MSS	2,290.0	7.75	121	2,283.5	-86.9	61.3	106.3	-9.4	4.239
MSS	2,319.6	7.50	110	2,312.7	-88.6	64.8	109.8	-7.8	5.008
MSS	2,352.4	7.25	100	2,345.3	-89.7	68.8	113.1	-5.4	3.980
MSS	2,529.5	11.00	94	2,520.2	-92.8	96.7	134.0	13.9	2.181
MSS	2,588.6	11.00	98	2,578.1	-94.0	107.9	143.1	21.7	1.292
MSS	2,739.5	10.50	98	2,726.4	-97.9	135.8	167.4	40.4	0.331
MSS	2,893.7	10.25	99	2,878.1	-102.0	163.3	192.5	58.7	0.200
MSS	3,084.0	9.75	100	3,065.5	-107.4	195.9	223.4	80.1	0.278
MSS	3,208.7	9.25	104	3,188.4	-111.7	216.0	243.1	92.7	0.664
MSS	3,316.9	11.25	103	3,295.0	-116.2	234.7	261.9	104.1	1.854
MSS	3,408.8	12.75	102	3,384.8	-120.3	253.4	280.5	115.7	1.648
MSS	3,471.1	14.00	101	3,445.5	-123.2	267.5	294.5	124.6	2.039
MSS	3,579.4	14.75	99	3,550.4	-127.8	294.0	320.5	141.8	0.831
MSS	3,736.9	13.75	96	3,703.0	-132.9	332.4	358.0	167.8	0.789
MSS	3,848.4	13.25	95	3,811.5	-135.4	358.3	383.0	186.0	0.495
MSS	4,012.5	13.00	95	3,971.2	-138.7	395.4	419.0	212.2	0.152
MSS	4,107.6	12.75	96	4,064.0	-140.7	416.5	439.6	227.0	0.352
MSS	4,258.5	12.75	98	4,211.2	-144.8	449.6	472.3	249.6	0.292
MSS	4,416.0	11.75	101	4,365.1	-150.2	482.5	505.4	271.3	0.753
MSS	4,566.9	12.50	98	4,512.6	-155.4	513.8	536.8	291.8	0.649
MSS	4,721.1	15.00	96	4,662.4	-159.9	550.1	572.9	316.7	1.650
MSS	4,845.8	17.00	99	4,782.2	-164.4	584.2	606.9	339.7	1.735



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Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates N-S	E-W	Closure	Vertical Section	Dog Leg Severity
MSS	4,937.7	16.75	102	4,870.1	-169.2	610.4	633.4	356.6	0.986
MSS	5,029.5	16.50	100	4,958.2	-174.3	636.2	659.6	373.1	0.680
MSS	5,180.5	11.50	99	5,104.5	-180.3	672.2	696.0	396.6	3.317
MSS	5,259.2	10.75	100	5,181.8	-182.8	687.2	711.1	406.4	0.983
MSS	5,351.1	13.00	100	5,271.7	-186.1	705.8	729.9	418.5	2.449
MSS	5,446.2	14.75	103	5,364.1	-190.7	728.1	752.7	432.6	1.988
MSS	5,570.9	14.00	100	5,484.8	-196.9	758.4	783.6	451.8	0.848
MSS	5,695.5	13.75	101	5,605.9	-202.3	787.8	813.4	470.7	0.278
MWD	5,774.3	13.00	100	5,682.5	-205.7	805.7	831.6	482.2	0.997
MWD	5,820.0	11.50	85	5,727.2	-206.2	815.4	841.0	489.2	7.667
MWD	5,864.9	9.06	69.96	5,771.3	-204.6	823.1	848.2	496.2	8.043
MWD	5,896.5	9.85	66.33	5,802.5	-202.6	827.9	852.4	501.1	3.128
MWD	5,928.2	9.98	64.48	5,833.8	-200.4	832.9	856.7	506.4	1.084
MWD	5,959.9	9.97	61.25	5,865.0	-197.8	837.8	860.8	511.7	1.766
MSS	5,995.0	9.10	88	5,899.6	-196.3	843.2	865.8	516.9	12.751
MSS	6,240.0	9.90	88	6,141.2	-194.9	883.6	904.9	548.6	0.327
MSS	6,576.0	9.00	91.3	6,472.7	-194.5	938.8	958.7	591.0	0.313
MSS	6,750.0	9.40	91.3	6,644.4	-195.1	966.6	986.1	611.8	0.230
MSS	7,130.0	10.80	90.4	7,018.5	-196.1	1,033.2	1,051.7	662.1	0.371
MSS	7,576.0	13.40	85.9	7,454.6	-192.6	1,126.6	1,142.9	735.5	0.620
MSS	7,886.0	17.40	84.3	7,753.4	-185.5	1,208.6	1,222.7	802.7	1.297
MSS	8,133.0	18.70	77.5	7,988.3	-173.2	1,284.0	1,295.6	868.2	1.001
MSS	8,291.0	18.10	70.8	8,138.2	-159.7	1,331.9	1,341.4	913.5	1.391
MSS	8,544.0	16.70	63.5	8,379.7	-130.5	1,401.6	1,407.6	985.6	1.024
MSS	8,677.0	16.30	62.3	8,507.2	-113.3	1,435.2	1,439.7	1,022.3	0.395
MSS	9,027.0	18.30	53.3	8,841.4	-57.6	1,522.8	1,523.8	1,125.2	0.953
MSS	9,325.0	23.90	47.5	9,119.3	11.2	1,604.8	1,604.9	1,232.3	2.003
MSS	9,384.0	25.40	47.1	9,173.0	27.9	1,622.9	1,623.2	1,256.8	2.558
MSS	9,484.0	26.70	46.9	9,262.8	57.8	1,655.0	1,656.1	1,300.7	1.303
MSS	9,673.0	29.00	44.7	9,429.9	119.4	1,718.3	1,722.4	1,388.8	1.333
MSS	10,048.0	32.10	42.3	9,752.8	257.7	1,849.3	1,867.2	1,578.2	0.888
MSS	10,400.0	35.80	41	10,044.8	404.7	1,979.8	2,020.8	1,772.7	1.071
MSS	10,458.0	35.80	41	10,091.8	430.3	2,002.1	2,047.8	1,806.3	0.000

Calculations using Minimum Curvature Method