



# Directional Survey Report

**Calpine**

Well ID: GDCF-36A-28

Well Name: GDCF 36A-28

Field: Geysers

Sect: 28 Town: 11N Rng: 8W County: Sonoma State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates N-S	E-W	Closure	Vertical Section	Dog Leg Severity
<b>Well Bore: Original Well Bore</b>				<b>Plane of Vertical Section: 298.34</b>					
** Tieln	0.0	0.00	0	0.0	0.0	0.0		0.0	
TRUE1	251.0	0.00	0	251.0	0.0	0.0	0.0	0.0	0.000
VERTT	514.0	0.00	0	514.0	0.0	0.0	0.0	0.0	0.000
VERTT	764.0	0.00	0	764.0	0.0	0.0	0.0	0.0	0.000
VERTT	1,081.0	0.00	0	1,081.0	0.0	0.0	0.0	0.0	0.000
VERTT	1,304.0	0.00	0	1,304.0	0.0	0.0	0.0	0.0	0.000
VERTT	1,588.0	0.00	0	1,588.0	0.0	0.0	0.0	0.0	0.000
VERTT	1,779.0	0.00	0	1,779.0	0.0	0.0	0.0	0.0	0.000
VERTT	1,802.0	0.00	303.4	1,802.0	0.0	0.0	0.0	0.0	0.000
TRUE1	1,956.0	2.70	303.4	1,955.9	2.0	-3.0	3.6	3.6	1.753
TRUE1	2,020.0	4.20	299.5	2,019.8	4.0	-6.3	7.5	7.5	2.371
TRUE1	2,083.0	5.20	304.6	2,082.6	6.7	-10.7	12.6	12.6	1.719
MWD	2,160.0	5.70	304.7	2,159.3	10.9	-16.7	19.9	19.9	0.649
MWD	2,224.0	6.90	305.4	2,222.9	14.9	-22.4	27.0	26.8	1.879
MWD	2,288.0	8.60	305.2	2,286.3	19.9	-29.5	35.6	35.4	2.657
MWD	2,351.0	10.20	302.1	2,348.4	25.6	-38.1	45.9	45.7	2.663
MWD	2,413.0	11.70	300	2,409.3	31.7	-48.2	57.6	57.4	2.503
MWD	2,477.0	12.90	297.5	2,471.8	38.2	-60.1	71.2	71.0	2.051
MWD	2,540.0	13.00	298.3	2,533.2	44.8	-72.6	85.3	85.2	0.326
MWD	2,603.0	13.50	299.6	2,594.6	51.8	-85.2	99.7	99.6	0.924
MWD	2,635.0	14.30	300.2	2,625.6	55.6	-91.9	107.4	107.3	2.540
MWD	2,666.0	15.00	301.8	2,655.6	59.7	-98.6	115.3	115.1	2.608
MWD	2,731.0	16.80	300.7	2,718.1	68.9	-113.8	133.1	132.9	2.808
MWD	2,852.0	18.90	298.282	2,833.3	87.1	-146.1	170.1	170.0	1.840
MSS	3,002.0	18.50	301	2,975.4	110.9	-187.9	218.2	218.0	0.639
MSS	3,218.0	18.50	294	3,180.2	142.5	-248.6	286.5	286.5	1.028
MSS	3,312.0	18.50	292	3,269.4	154.1	-276.1	316.2	316.1	0.675
MSS	3,408.0	18.00	289	3,360.6	164.7	-304.2	345.9	345.9	1.108
MSS	3,532.0	18.00	286	3,478.5	176.2	-340.7	383.6	383.5	0.748
MSS	3,617.0	17.50	286	3,559.4	183.3	-365.7	409.0	408.9	0.588
MSS	3,694.0	17.00	284	3,633.0	189.2	-387.7	431.4	431.1	1.007
MSS	3,725.0	17.00	285	3,662.6	191.5	-396.5	440.3	439.9	0.943
MSS	3,820.0	17.00	285	3,753.5	198.7	-423.3	467.6	466.9	0.000
MSS	3,978.0	15.00	279	3,905.4	207.9	-465.8	510.1	508.7	1.641
MSS	4,065.0	14.50	280	3,989.5	211.5	-487.7	531.6	529.6	0.645
MSS	4,236.0	14.00	279	4,155.2	218.5	-529.2	572.5	569.5	0.326
MSS	4,282.0	13.50	281	4,199.9	220.4	-540.0	583.2	579.8	1.500
MSS	4,345.0	12.75	294	4,261.3	224.6	-553.5	597.4	593.8	4.824
MSS	4,416.0	14.00	301	4,330.4	232.2	-568.0	613.7	610.2	2.878
MSS	4,508.0	15.50	300	4,419.3	244.1	-588.2	636.9	633.6	1.654
MSS	4,725.0	21.25	296	4,625.2	275.9	-648.7	705.0	701.9	2.711
MSS	4,843.0	22.50	305	4,734.7	298.2	-686.5	748.4	745.7	3.029
MSS	5,063.0	22.00	305	4,938.3	346.0	-754.7	830.2	828.5	0.227
MSS	5,294.0	21.25	302	5,153.1	393.0	-825.6	914.4	913.2	0.578



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Sect: 28 Town: 11N Rng: 8W County: Sonoma State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
MSS	5,448.0	21.50	298	5,296.5	421.0	-874.2	970.3	969.3	0.960
MSS	5,603.0	22.00	295	5,440.5	446.6	-925.6	1,027.7	1,026.7	0.786
MSS	5,757.0	23.00	292	5,582.7	470.1	-979.7	1,086.6	1,085.4	0.988
MSS	5,913.0	23.00	291	5,726.3	492.4	-1,036.4	1,147.4	1,145.9	0.250
MSS	6,061.0	23.00	291	5,862.6	513.1	-1,090.4	1,205.1	1,203.3	0.000
MSS	6,219.0	23.00	291	6,008.0	535.3	-1,148.0	1,266.7	1,264.5	0.000
MSS	6,379.0	22.00	291	6,155.8	557.2	-1,205.2	1,327.7	1,325.2	0.625
MSS	6,570.0	22.00	288	6,332.9	581.1	-1,272.6	1,399.0	1,395.9	0.588
MSS	6,728.0	21.00	286	6,479.9	598.0	-1,328.0	1,456.4	1,452.7	0.785
MSS	6,886.0	20.00	284	6,627.9	612.4	-1,381.4	1,511.0	1,506.5	0.773
MSS	7,044.0	20.00	282	6,776.4	624.5	-1,434.0	1,564.1	1,558.6	0.433
MSS	7,203.0	18.00	282	6,926.7	635.3	-1,484.7	1,614.9	1,608.3	1.258
MSS	7,328.0	18.00	283	7,045.6	643.7	-1,522.4	1,652.9	1,645.5	0.247
MSS	7,586.0	19.00	281	7,290.3	660.6	-1,602.4	1,733.3	1,724.0	0.459
MSS	7,860.0	20.00	281	7,548.6	678.1	-1,692.2	1,823.0	1,811.3	0.365
MSS	8,366.0	21.50	284	8,021.7	717.0	-1,867.2	2,000.1	1,983.7	0.363
MSS	8,425.0	21.50	284	8,076.6	722.3	-1,888.1	2,021.6	2,004.7	0.000

Calculations using Minimum Curvature Method