



Santa Rosa, CA 707-571-1700

COMPANY Calpine Corporation
 WELL Aidlin 5 Workover/Deepen 2001
 FIELD Geysers
 COUNTY/STATE Sonoma County, California
 WELL HEAD COORDINATES
 3650'N & 4668'W of SW Cnr, Sec4 T11N R9W
 ELEVATION 1258' GL + 27' to KB
 SPUD DATE 1/31/2001
 TD DATE 2/4/2001
 TOTAL DEPTH 10091'
 TRUE VERTICAL DEPTH NA
 TD LOCATION NA
 CONTRACTOR/RIG NCPA Rig 1
 COMPANY REPRESENTATIVE Tim Smith

LOG INTERVAL
 DATE LOGGED 1/31/2001 TO 2/4/2001
 DEPTH LOGGED 9690' TO 10091'
 MUD DRILLING TO
 AIR DRILLING 9690' TO 10091'
 LOG SCALE 1:600 UNIT NO. DC3
 LOGGING GEOLOGISTS
 Alan Bailey
 Dustin Cox Dick Dunlap

HOLE
 7.625 TO 10091
 TO
 TO
 TO
 TO
 TO

CASING
 AT
 AT
 AT
 AT
 AT

ABBREVIATIONS

NB New Bit BHT Bottom Hole Temp
 RRB Re-run Bit C Carbide Test
 CB Core Bit NR No Returns
 WOB Weight On Bit LAT Logged After Trip
 SPM Strokes per Minute CFM Cubic Feet per Min
 PP Pump Pressure BUT Bottoms Up Temp
 RPM Revolutions per Min

SYMBOLS

Wireline Log Casing Shoe
 Steam/Water Entry Flow Test
 Deviation Survey Cored Interval
 No Recovery

LITHOLOGY

Argillite Argillaceous Graywacke
 Chert Volcanic Graywacke
 Phyllite Siliceous Graywacke
 Greenstone Weak Foliation
 Serpentine Strong Foliation
 Blueschist Marginal Alteration
 Felsite Pervasive Alteration
 Rhyolite Weakly Hornfelsic
 Andesite Strongly Hornfelsic
 Lithic Graywacke

REMARKS

Retrieved fish from well. Made 401 feet of new 7 5/8" hole.
 Steam Entry @ 9751':
 Standpipe pressure increase (psi):
 Initial Stable
 25 7

SECONDARY MINERALS

Q = Quartz Rare << 1%
 C = Calcite Trace < 1%
 P = Pyrite Minor 1% to 4%
 E = Epidote Common 4% to 7%
 R = Pyrrhotite Abundant 7% to 10%
 Ch = Chlorite > 10%
 X = Axinite
 A = Actinolite
 T = Tourmaline

Tecton Geologic Aidlin 5 Workover (2001) Scale 1: 600

Drilling Data	Lithology	Minerals	Temperatures		Pressure		Gas Analysis		Descriptions
			Temperature In	Temperature Out	Pressure In	Pressure Out	Carbon Dioxide	Hydrogen Sulfide	
ROP 40 ft/hr			50 deg F	250	300 psi	700	0	0	
Weight on Bit 0 k lbs	Depth 80	Tourmaline Axinite Chlorite Pyrrhotite Epidote Pyrite Calcite Quartz							
1/31 NB #3 Smith Q47J	9700				532 psi				Deepen Aidlin 5 RD2 from 9690' on 1/31/01. Drill 7 5/8" hole.
ROP = 5'/hr									Silicic Graywacke: med gry, mod rexln w/vis to indist gr bndrs, v fn samp size.
ROP = 5-7'/hr					537 psi				Steam Entry at 9751'. Initial increase: 25 psi Stable increase: 7 psi
ROP = 12'/hr	9750				553 psi				
ROP = 10'/hr									Silicic Graywacke: gry-m gry, mod mott app, hd-v hd, silic, mod rexln w/vis to indist gr bndrs, r milky qtz, com phyll argillite frags, v fn samp size.
ROP = 10'/hr	9800				547 psi				
2/1 155'/15 hrs									Silicic Graywacke: lt gry-m gry, sl mott app, v silic, mod rexln w/pr-indist gr bndrs, intbd w/sl rexln phyll argillite, tr clr euh qtz, r pyr, poor samp quality.
NB #4 SMITH Q47J	9850		208 degF		502 psi				
WOB 20K			207 degF		1 gpm mist			Wet Test #28 @ 9870'	
RPM 55-60					530 psi			Air On	
CFM 2400					3 gpm mist			46.2 ppm / 1.62 #/hr H2S C/NC = 35,000#/hr	
2/2	9900		190 degF		536 psi				
ROP = 7'/hr			191 degF						
					539 psi				
	9950		192 degF		547 psi				
			193 degF		8 gpm mist				
								45.00 deg N30W	
142'/17 hrs								Wet Test #31 @ 9985'	
NB #5 SMITH Q47J	10000							Air On	
2/3								12.7 ppm / 0.45 #/hr H2S C/NC = 35,200#/hr	
ROP = 7'/hr			194 degF		525 psi				
ROP = 8'/hr									
WOB 15-20k	10050							Wet Test #32	
RPM 55-60								Air On	
CFM 2400								369 ppm / 13.0 #/hr H2S	
104'/11 hrs	10100		181 degF		slug				
	10								

GL04365-2

TD at 10091' on 2/4/2001.
Left 2 cones in hole.