

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
WELL SUMMARY REPORT — GEOTHERMAL

API Well No. **09790840**

Operator Geysers Power Company, LLC		Well Happy Jack 12				
Field Geysers (Unit 5 & 6)		County Sonoma	Sec. 12	T. 11N	R. 9W	B.&M. M.D.
Location (Give surface location from property or section corner, street center line.) 170' North and 1868' West of the S.E. corner of Section 12, T11N, R9W					Elevation of ground above/below sea level 1935'	
Latitude/Longitude (if known)		Latitude:	Longitude:			
Was the well directionally drilled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, show coordinates at total depth. 46' South and 2119' East of surface location						

Commenced drilling (date) 01/29/09	Total depth	True Vertical Depth	Plugged Depth	Depth measurements taken from top of: <input type="checkbox"/> Derrick Floor <input type="checkbox"/> Rotary Table <input checked="" type="checkbox"/> Kelly Bushing
Completed drilling (date) 03/29/09	7622'	7247' TVD		Which is 30' feet above ground
Commenced production/injection (date) Hookup Pending	Junk		GEOLOGICAL MARKERS Refere to lithology log	
Name of production/injection zone(s) Franciscan			DEPTH	
			Formation and age at total depth Jurassic	Base of fresh water

DATE	STATIC TEST (Shut-in well head)	PRODUCTION TEST DATA									
		Total mass flow data						Separator data			
		Pressure (psig)	Sfc Pressure (psi)	Orifice (Inches)	Rate (lbs/hr)	Enthalpy (Btu/lb)	Temperature (°F)	Sfc Pressure (psi)	Temperature (°F)	Steam Rate (lbs/hr)	Water Rate (lbs/hr)

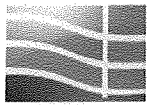
CASING AND CEMENTING RECORD (Present Hole)							
Size of Casing (API) (inches)	Top of Casing (feet)	Depth of Shoe (feet)	Weight of Casing (lbs/ft)	Grade and Type of Casing	Size of Hole Drilled (inches)	Number of Sacks or Cubic Feet of Cement	Top(s) of Cement in Annulus (feet)
13 3/8"	Surface	500'	68	S-80 / k-55	17 1/2"	468 cf	Surface
10 3/4"	Surface	66'	40.5	K-55	12 1/4"	730 cf (total)	Surface
9 5/8"	66'	1725'	43.5	L-80	12 1/4"	(See Above)	66'
7"	Surface	1564'	29	L-80/C-13	9 5/8" csg	N/A	N/A
7"	1548'	7622'	29/32	L-80/C-13	8 1/2"	N/A	N/A

PERFORATED CASING LINER (Size, top, bottom, perforated intervals, size and spacing of perforations, and method.)
7" (bottom liner), slotted 5930' - 7622' with .25" X 2 1/2" slots, 6 Rows, 12 slots/ft

Logs/surveys run? Yes No If yes, list type(s) and depth(s).
Lithology Log, Directional Surveys Surface - 7541'

In compliance with Sec. 3215, Division 3, of the *Public Resources Code*, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Name Marc W. Steffen		Title Agent	
Address 10350 Socrates Mine Road		City/State Middletown, California	Zip Code 95461
Telephone 707-431-6102	Signature <i>Marc W. Steffen</i>		Date 6/23/09
E-Mail marc@calpine.com	Fax 707-431-6148		



Well Summary Report

Calpine

Well ID: Happy Jack 12
Field: Geysers

Well Name: Happy Jack 12
Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Operator: Operator	Working Interest:
AFE Nos: 205533	
API No:	Spud Date:
Location:	
Reports for 00:00 on date shown	

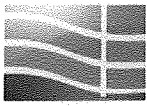
29-Jan-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
	Current Ops: 00:00 to 06:00 Waited on daylight to load out the rig.		
	Operation Summary: Prepared rig for the rig move. Laid down the kelly and swivel cleared the rig floor and lowered the derrick and rigged down. (18 hrs) Waited on daylight to load out the rig. (6 hrs)		
	Comments: Prepared rig for the rig move. Laid down the kelly and swivel cleared the rig floor and lowered the derrick and rigged down. Waited on daylight to load out the rig.		
	Mud Data: None		
	Surveys: None		
	Daily Costs (\$): 29,545	Well Costs (\$): 29,545	
	Drilling Days: 1	Completion Days: 0	Workover Days: 0

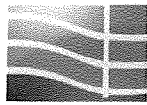
30-Jan-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
	Current Ops: Rig idle while waiting on daylight to load out the rig.		
	Operation Summary: Rig idle while waiting on daylight to load out the rig. (7 hrs) Rigged down and loaded out the rig. Held a rig move safety tailboard. (11 hrs) Rig idle while waiting on daylight to load out the rig. (6 hrs)		
	Comments: Rig idle while waiting on daylight to load out the rig. Rigged down and loaded out the rig. Rig idle while waiting on daylight to load out the rig.		
	Mud Data: None		
	Surveys: None		
	Daily Costs (\$): 27,545	Well Costs (\$): 57,090	
	Drilling Days: 2	Completion Days: 0	Workover Days: 0

31-Jan-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
	Current Ops: Rig idle while waiting on daylight to load out the rig.		
	Operation Summary: Rig idle while waiting on daylight to load out the rig. (7 hrs) Rigged down and loaded out the rig. Held a rig move safety tailboard. (11 hrs) Rig idle while waiting on daylight to finish load out the rig. (6 hrs)		
	Comments: Rig idle while waiting on daylight to load out the rig. Rigged down and loaded out the rig. Held a rig move safety tailboard. Rig idle while waiting on daylight to finish load out the rig.		
	Mud Data: None		
	Surveys: None		
	Daily Costs (\$): 27,545	Well Costs (\$): 84,635	
	Drilling Days: 3	Completion Days: 0	Workover Days: 0

01-Feb-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
	Current Ops: 00:00 to 07:00 Rig idle while waiting on daylight to rig up.		
	Operation Summary: Rig idle while waiting on daylight to load out the rig. (7 hrs)		

Well Summary Report		Calpine	
Well ID: Happy Jack 12		Well Name: Happy Jack 12	
Field: Geysers		Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
Rigged down and finished loading out the rig. Held a rig move safety tailboard. (8 hrs) Started rigging up on Happy Jack # 12. Set Matting boards, subbases and the drilling office. (3 hrs) Rig idle while waiting on daylight to rig up. (6 hrs)			
Comments: Rig idle while waiting on daylight to load out the rig. Rigged down and finished loading out the rig. Held a rig move safety tailboard. Started rigging up on Happy Jack # 12. Set Matting boards, subbases and the drilling office. Rig idle while waiting on daylight to rig up.			
Mud Data: None			
Surveys: None			
Daily Costs (\$): 26,545		Well Costs (\$): 111,180	
Drilling Days: 4		Completion Days: 0	
		Workover Days: 0	
02-Feb-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
Current Ops: 0000-0700 Rig idle, waited on daylight.			
Operation Summary:			
Rig idle, waited on daylight. (7 hrs)			
Held tailboard safety meeting. (0.5 hrs)			
Set in motor package, fuel tank, pits, mud tanks, walk. Unloaded parts of the derrick on location. (10.5 hrs)			
Rig idle, waited on daylight. (6 hrs)			
Comments: Rig idle, waited on daylight. Held tailboard safety meeting. Set in motor package, fuel tank, pits, mud tanks, walk. Unloaded parts of the derrick on location.			
Mud Data: None			
Surveys: None			
Daily Costs (\$): 29,848		Well Costs (\$): 141,028	
Drilling Days: 5		Completion Days: 0	
		Workover Days: 0	
03-Feb-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
Current Ops: 0000-0700 Rig idle, waited on daylight.			
Operation Summary:			
Rig idled, waited on daylight (7 hrs)			
Continued to set the rig in on Happy Jack 12. Started rigging up. (11 hrs)			
Rig idle, waited on daylight. (6 hrs)			
Comments: Rig idle, waited on daylight. Finished setting the rest of the rig in on Happy Jack 12. Built and pin the derrick. Set drawworks and continued to rig up. Rig idle, waited on daylight.			
Mud Data: None			
Surveys: None			
Daily Costs (\$): 190,137		Well Costs (\$): 331,165	
Drilling Days: 6		Completion Days: 0	
		Workover Days: 0	
04-Feb-09	Current Depth (ft):	Hole Drilled (ft):	Ave ROP:
Current Ops: 0000-0700 Rig idle, waited on daylight.			
Operation Summary:			
Rig idle, waited on daylight. (7 hrs)			
Finished setting the rig in and released last crane. Started stringing up derrick. (11 hrs)			
Rig idle waited on daylight. (6 hrs)			
Comments: Rig idle, waited on day light. Finished setting the rig in and released last crane. Started stringing up the derrick. Rig idle waited on daylight.			
Mud Data: None			
Surveys: None			

 Well Summary Report		Calpine		
		Well ID: Happy Jack 12 Well Name: Happy Jack 12 Field: Geysers Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA		
Daily Costs (\$):		27,643	Well Costs (\$):	358,808
Drilling Days:		7	Completion Days:	0
			Workover Days:	0
05-Feb-09	Current Depth (ft):	69	Hole Drilled (ft):	69
	Ave ROP:			
	Current Ops: 0000-0600 Continue to rig up. Move drilling mud from storage Baker tanks to the mud pits with vacuum trucks.			
	Operation Summary:			
	Rig idle, waited on daylight. (7 hrs)			
	Finished stringing derrick. Raised and pinned derrick. Un bridled bridle line. (11 hrs)			
	Continue to rig up. Unload mud and drilling tools. Extend pump cables. Install mud line extensions. Empty and move equipment from junk bin to the walk to rig up with. Move junk bin and spot Tecton trailer. Started to rig up floor. (6 hrs)			
	Comments: Rig Idle, waited on daylight. Finished stringing up derrick. Raised derrick (1630 hrs). Continued to rig up. Extended pump cables. installed new pieces of mud line extension, unloaded mud. Continued to rig up floor and mud pits.			
	Mud Data:	None		
	Surveys:	None		
Daily Costs (\$):		27,545	Well Costs (\$):	386,353
Drilling Days:		8	Completion Days:	0
			Workover Days:	0
06-Feb-09	Current Depth (ft):	69	Hole Drilled (ft):	0
	Ave ROP:			
	Current Ops: 0000-0600 Picked up 17 1/2" streight hole mud motor assembly and contioned mud. Started drilling surface hole.			
	Operation Summary:			
	Rigged up. (8 hrs)			
	Set in 20" annular blowout preventer and flow nipple. Install and modify flowline. (5 hrs)			
	Reinstalled and sealed chain guards. (3 hrs)			
	Hammered up annular preventers, centered stack. Set and hooked up accumulator and lines. (4 hrs)			
	Picked up kelly and swivel. Rigged up kelly spinner. (2 hrs)			
	Trouble shot SCR to get mud pumps to work. (2 hrs)			
	Comments: Rigged up rig. Set in 20" annular preventer. Installed and modified flowline. Reinstalled and sealed chain guards. Set accumular and rigged up accumulator lines. Hammered up annular preventer and centered the stack, Picked up swivel and kelly and hooked up kelly spinner. Fuction tested the 20" annular preventer. Trouble shot mud pumps in the SCR to get pumps to work. (Note: Rig went on dayrate at 1600 hr.)			
	Mud Data:	None		
	Surveys:	None		
Daily Costs (\$):		75,362	Well Costs (\$):	461,715
Drilling Days:		9	Completion Days:	0
			Workover Days:	0
07-Feb-09	Current Depth (ft):	167	Hole Drilled (ft):	98
	Ave ROP:			9.8
	Current Ops: 0000-0600 Rigged up Halliburton. Held tailboard safety meeting. Ran in the hole with 5" sawtooth washing to bottom a 167'. Hole kept falling back in. Wash and cleaned to bottom at 167', hole kept falling in. Hooked up Halliburton at 155' and kept hole open at that depth while pumping 60 bbis of cement. Hole volume was 40 bbis, we never saw any cement to surface. Cement in place at 0230 hours. Note: While washing to bottom lost total circulation for a short period of time then got about 30% returns. Mixed mud and waited on cement.			
	Operation Summary:			
	Trouble shot and repaired electrical problem, mud pumps wouldn't start. (2 hrs)			
	Sized slips and dog collar camp to fit 9 1/2" drill collars. (1 hrs)			
	Made up 17 1/2" streight mud motor assembly. (4 hrs)			
	Repaired leak in the mud line. (1 hrs)			



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Drilled and circulated 17 1/2" hole from 69' to 110', hole was running. Hole taking 40 bph of mud. (4.5 hrs)
 Trouble shot and repaired generator problem. (1.5 hrs)
 Continued to drill and circulate 17 1/2" hole, hole still running. Hole started taking 80 bph of mud. (5.5 hrs)
 Pulled out of the hole. (1 hrs)
 Waited on Halliburton to arrive. (3.5 hrs)

Comments: Trouble shot and repaired electrical problem, mud pumps wouldn't turn on. Made up 17 1/2" streight hole mud motor assembly. Repaired leak in the mud line. Drill from 69' to 110', hole was running circulated trying and clean the hole. Repaired SCR problem. Drill 17 1/2" hole from 110' to 137' circulating and attempting to clean the hole, hole was taking 40 bph. Continued to drill and circulate to clean the hole (hole was running) to 167'. Hole started taking 80 bph. Attempted to make connection unsuccessfully. Circulated and pulled out of the hole. Waited for Halliburton to arrive to pump cement and stabilize the hole..

Mud Data: MW: 9 Viscosity: 55 Filtrate: 9.2

Surveys: None

Daily Costs (\$): 46,612 **Well Costs (\$):** 508,327

Drilling Days: 10 **Completion Days:** 0 **Workover Days:** 0

08-Feb-09

Current Depth (ft): 167 **Hole Drilled (ft):** 0 **Ave ROP:**

Current Ops: 0000-0600 Circulated and cleaned the hole.. Drilled 17 1/2" hole with streight mud motor assembly from 167' to 249', picking up 9" drill collars. Hole taking about 40 bph.

Operation Summary:

Held safety tailboard with Halliburton and crew. (0.5 hrs)
 Ran in the hole washing fill down to bottom at 167', hole not staying open. (2 hrs)
 Rigged up Halliburton and kept hole open while and pumping 60 bbls of cement at 155'. (0.5 hrs)
 Wait on cement. (Mixed mud) (6 hrs)
 Ran in the hole with stand of drill pipe and tagged cement at 82'. Hole was staying full. (1 hrs)
 Ran in the hole with streight mud motor assembly and clean out cement and contaminated mud from 82' to 105'. (4 hrs)
 Rig down, trouble shoting SCR. (8.5 hrs)
 Cleaned out cement down to bottom at 167' (1.5 hrs)

Comments: Rigged up Halliburton. Held tailboard safety meeting. Ran in the hole with 5" sawtooth washing to bottom a 167', hole kept falling back in. Hooked up Halliburton at 155' and kept hole open at that depth while pumping 60 bbls of cement. Hole volume was 40 bbls, did not get any cement to surface. Cement in place at 0230 hours. Note: While washing to bottom lost total circulation for a short period of time then got about 30% returns. Mixed mud and waited on cement. Ran in the hole and tagged top of the cement at 82'. Clean and circulated out contaminated mud and cement to 105'. Rig down, trouble shooting SCR, (12 hrs.). Finished cleaning out cement to 167'.

Mud Data: MW: 8.6 Viscosity: 40 Filtrate: 18

Surveys: None

Daily Costs (\$): 82,415 **Well Costs (\$):** 590,742

Drilling Days: 11 **Completion Days:** 0 **Workover Days:** 0

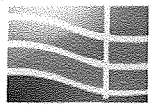
09-Feb-09

Current Depth (ft): 241 **Hole Drilled (ft):** 74 **Ave ROP:** 14.8

Current Ops: 00:00 to 06:00 Waited on the cement to harden. Ran in the hole and tagged the top of the cement at 102'. Started to clean out the cement.

Operation Summary:

Drilled 17 1/2" hole from 167' to 200'. (1 hrs)
 Circulated the hole clean. (0.5 hrs)
 Laid down drill pipe and picked up 9" drill collars. (1 hrs)



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Reamed and cleaned out fill from 190' to 200'. (0.5 hrs)
 Drilled 17 1/2" hole from 200' to 241'. Lost 160 bbls at 241'. (4 hrs)
 Circulated the hole clean. (1 hrs)
 Pulled out of the hole. (0.5 hrs)
 Repair drawworks and SCR house. (3.5 hrs)
 Waited on cementers. (5.5 hrs)
 Ran in the hole with drill pipe and a saw tooth joint to 240'. (0.5 hrs)
 Circulated and rigged up cementers. Held a safety tailboard on cementing. (2 hrs)
 Set a 200 lin. ft. cement plug # 2 at 240'. and pulled out of the hole to 30'. (1 hrs)
 Closed the Hydril bag and squeezed away 10 bbls. at 38 psi. (0.5 hrs)
 Waited on cement to harden. Rigged down the cementers. (2.5 hrs)

Comments: Drilled 17 1/2" hole from 167' to 200'. Circulated the hole clean. Laid down drill pipe and picked up 9" drill collars. Reamed and cleaned out fill from 190' to 200'. Drilled 17 1/2" hole from 200' to 241'. Lost 160 bbls at 241'. Circulated the hole clean. Pulled out of the hole. Repair drawworks and SCR house. Waited on cementers. Ran in the hole with drill pipe and a saw tooth joint to 240'. Circulated and rigged up cementers. Held a safety tailboard on cementing. Set a 200 lin. ft. cement plug # 2 at 240'. and pulled out of the hole to 30'. Closed the Hydril bag and squeezed away 10 bbls. at 38 psi. Waited on cement to harden. Rigged down the cementers.

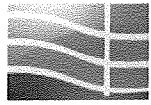
Mud Data: MW: 9 Viscosity: 75 Filtrate: 18

Surveys: None

Daily Costs (\$):	96,379	Well Costs (\$):	687,121
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Drilling Days:	12	Completion Days:	0	Workover Days:	0
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10-Feb-09	Current Depth (ft):	515	Hole Drilled (ft):	274	Ave ROP:	34.3
	Current Ops:	00:00 to 06:00 Finished running a wiper trip and circulated hole clean and started pulling out of the hole to run casing.				
	Operation Summary:	Waited on cement plug to harden. (3 hrs) Ran in the hole and tagged the top of the cement at 102'. (1 hrs) Cleaned out cement from 102' to 229'. (5 hrs) Pulled out of the hole with drill pipe and picked up drill collars. (1.5 hrs) Circulated and ran a single shot survey at 160' inclination 1 degree. (1 hrs) Cleaned out cement from 229' to 241'. (1.5 hrs) Drilled 17 1/2" hole from 241' to 515'. (8 hrs) Circulated hole clean. (1 hrs) Ran a single shot survey at 442'. (0.5 hrs) Pulled out of the hole for the wiper. (1.5 hrs)				
	Comments:	Waited on cement plug to harden. Ran in the hole and tagged the top of the cement at 102'. Cleaned out cement from 102' to 229'. Pulled out of the hole with drill pipe and picked up drill collars. Circulated and ran a single shot survey at 160' inclination 1 degree. Cleaned out cement from 229' to 241'. Drilled 17 1/2" hole from 241' to 515'. Circulated hole clean. Ran a single shot survey at 442'. Pulled out of the hole for the wiper.				
	Mud Data:	MW: 9 Viscosity: 42 Filtrate: 14				
	Surveys:	160ft - 1 deg Inc, deg Az; 442ft - 3 deg Inc, deg Az;				
	Daily Costs (\$):	49,889	Well Costs (\$):	737,011		
	Drilling Days:	13	Completion Days:	0	Workover Days:	0
11-Feb-09	Current Depth (ft):	515	Hole Drilled (ft):		Ave ROP:	
	Current Ops:	Waiting on cement to harden.				
	Operation Summary:	Pulled out of the hole and serviced the rig. (1 hrs)				



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Run in the hole. (2 hrs)
 Circulated hole clean. (1 hrs)
 Pulled out of the hole and laid down mud motor and 17 1/2" tools. (4 hrs)
 Picked up and stood back Drill pipe for the stab in. (1 hrs)
 Rigged up to run casing and casing truck broke as it was being rigged up. Rigged truck down. (4 hrs)
 Ran 13 3/8" casing with air hoists to 500'. (3 hrs)
 Rigged down casing equipment and prepared to run the drill pipe stab in. (2 hrs)
 Ran in the hole and stabbed into the float collar and rigged up to circulate the casing. (2 hrs)
 Circulated casing. (1 hrs)
 Cemented 13 3/8" casing at 500'. C.I.P. @ 22:30 (1.5 hrs)
 Pulled out of the hole with the stab in and rigged down stab in running equipment. (1.5 hrs)

Comments: Pulled out of the hole and serviced the rig. Run in the hole. Circulated hole clean. Pulled out of the hole and laid down mud motor and 17 1/2" tools. Picked up and stood back Drill pipe for the stab in. Rigged up to run casing and casing truck broke as it was being rigged up. Rigged truck down. Ran 13 3/8" casing with air hoists to 500'. Rigged down casing equipment and prepared to run the drill pipe stab in. Ran in the hole and stabbed into the float collar and rigged up to circulate the casing. Circulated casing. Cemented 13 3/8" casing at 500'. C.I.P. @ 22:30. Pulled out of the hole with the stab in and rigged down stab in running equipment.

Mud Data: MW: 8.9 Viscosity: 35 Filtrate: 12

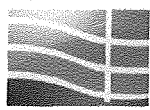
Surveys: None

Daily Costs (\$):	142,251	Well Costs (\$):	879,262
Drilling Days:	14	Completion Days:	0
		Workover Days:	0

12-Feb-09	Current Depth (ft):	515	Hole Drilled (ft):	Ave ROP:
	Current Ops:	00:00 to 06:00 Cut off the casing and laid down the 20" B.O.P. Welded on the 13 3/8" well head		
	Operation Summary:	Waited on cement to harden. (10.5 hrs) Repaired rig draw works. (11.5 hrs) Nipped down the B.O.P. to cut off the casing. (2 hrs)		
	Comments:	Waited on cement to harden. Repaired rig draw works. Nipped down the B.O.P. to cut off the casing.		
	Mud Data:	MW: 8.9 Viscosity: 37 Filtrate: 15		
	Surveys:	None		
	Daily Costs (\$):	49,660	Well Costs (\$):	928,922
	Drilling Days:	15	Completion Days:	0
			Workover Days:	0

13-Feb-09	Current Depth (ft):	515	Hole Drilled (ft):	Ave ROP:
	Current Ops:	00:00 to 06:00 Nipple up 13 3/8" B.O.P.		
	Operation Summary:	Raised the B.O.P. and cut off the 13 3/8" casing and nipped down the 20" B.O.P. (2 hrs) Welded on 13 3/8" well head. (4 hrs) Nipple up 13 3/8" B.O.P. (18 hrs)		
	Comments:	Raised the B.O.P. and cut off the 13 3/8" casing and nipped down the 20" B.O.P. Welded on 13 3/8" well head. Nipple up 13 3/8" B.O.P.		
	Mud Data:	None		
	Surveys:	None		
	Daily Costs (\$):	50,597	Well Costs (\$):	979,518
	Drilling Days:	16	Completion Days:	0
			Workover Days:	0

14-Feb-09	Current Depth (ft):	577	Hole Drilled (ft):	62	Ave ROP:	31.0
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Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect. 28 Town: 11N Rng: 9W County: Sonoma State: CA

Current Ops: 00:00 to 06:00 Trouble shoot a problem with the MWD and drilled to 701'.

Operation Summary:

Nipple up 13 3/8" B.O.P. (7 hrs)

Function test rams and pressure test blind rams and casing to 500 psi. Tested pipe rams to 500 psi. (1.5 hrs)

Picked up directional tools and the drilling assembly to 433'. (8.5 hrs)

Circulated contaminated mud out at 433'. (1 hrs)

Finished making up the drilling assembly and tagged the float collar at 467'. (1 hrs)

Drilled out the float collar at 467' and cleaned out cement to 500'. Drilled out the casing shoe at 500' and cleaned out cement to 515'. (3 hrs)

Drilled 12 1/4" hole with the Tru Trak system from 515' to 577'. (2 hrs)

Comments: Nipple up 13 3/8" B.O.P. Function test rams and pressure test blind rams and casing to 500 psi. Tested pipe rams to 500 psi. Picked up directional tools and the drilling assembly to 433'. Circulated contaminated mud out at 433'. Finished making up the drilling assembly and tagged the float collar at 467'. Drilled out the float collar at 467' and cleaned out cement to 500'. Drilled out the casing shoe at 500' and cleaned out cement to 515'. Drilled 12 1/4" hole with the Tru Trak system from 515' to 577'.

Mud Data: MW: 8.7 Viscosity: 30 Filtrate: 20

Surveys: 556ft - 2.57 deg Inc, 175.41 deg Az; 587ft - 2.41 deg Inc, 166.37 deg Az;

Daily Costs (\$): 87,801 **Well Costs (\$):** 1,067,319

Drilling Days: 17 **Completion Days:** 0 **Workover Days:** 0

15-Feb-09

Current Depth (ft): 884 **Hole Drilled (ft):** 307 **Ave ROP:** 26.7

Current Ops: 00:00 to 06:00 Moved tools and waited on mud motor and kick subs

Operation Summary:

Drilled 12 1/4" hole with the Tru Trak system from 577' to 608'. (1 hrs)

Trouble shoot a problem with the MWD equipment. (3 hrs)

Drilled 12 1/4" hole with the Tru Trak system from 608' to 731'. (5 hrs)

Circulated and repaired pump # 1 expendables. (3 hrs)

Drilled 12 1/4" hole with the Tru Trak system from 731' to 884'. (5.5 hrs)

Circulated hole clean. (0.5 hrs)

Pulled out and laid down the Tru Trak system due to not getting the hole build we needed. (6 hrs)

Comments: Drilled 12 1/4" hole with the Tru Trak system from 577' to 608'. Trouble shoot a problem with the MWD equipment. Drilled 12 1/4" hole with the Tru Trak system from 608' to 731'. Circulated and repaired pump # 1 expendables. Drilled 12 1/4" hole with the Tru Trak system from 731' to 884'. Circulated hole clean. Pulled out and laid down the Tru Trak system due to not getting the hole build we needed.

Mud Data: MW: 9.1 Viscosity: 36 Filtrate: 10

Surveys: 618ft - 2.25 deg Inc, 177.05 deg Az; 649ft - 2.48 deg Inc, 160.35 deg Az; 679ft - 2.54 deg Inc, 167.13 deg Az; 710ft - 2.55 deg Inc, 164.18 deg Az; 740ft - 2.51 deg Inc, 167.16 deg Az; 770ft - 2.64 deg Inc, 162.86 deg Az; 801ft - 2.68 deg Inc, 158.23 deg Az; 832ft - 2.95 deg Inc, 154.55 deg Az;

Daily Costs (\$): 83,142 **Well Costs (\$):** 1,150,461

Drilling Days: 18 **Completion Days:** 0 **Workover Days:** 0

16-Feb-09

Current Depth (ft): 927 **Hole Drilled (ft):** 43 **Ave ROP:**

Current Ops: 0000-0600 Directional drill 12 1/4" hole with mud motor and MWD from 927' to 1069'.

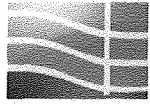
Operation Summary:

Waited on mud motor and MWD to arrive from Bakersfield. (13 hrs)

Trouble shot SCR. (1 hrs)

Unloaded and measured directional tools. (1 hrs)

Made up 12 1/4" bit, mud motor and MWD assembly. Ran in the hole to 846'. (5.5 hrs)



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Safety reamed from 846' to bottom at 884'. (0.5 hrs)

Directional drill 12 1/4" hole with mud motor and MWD from 884' to 927'. (3 hrs)

Comments: Waited on mud motor and MWD to arrive from Bakersfield. Trouble shot SCR house. Unloaded directional tool. Made up mud motor and MWD assembly and ran in the hole to 846'. Safety reamed from 846' to bottom at 884'. Directional drill 12 1/4" hole with mud motor and MWD to 927'.

Mud Data: MW: 9.1 Viscosity: 40 Filtrate: 10

Surveys: 863ft - 3.32 deg Inc, 140.26 deg Az; 893ft - 3.69 deg Inc, 133.95 deg Az; 924ft - 4.1 deg Inc, 124 deg Az;

Daily Costs (\$): 58,920 **Well Costs (\$):** 1,209,381

Drilling Days: 19 **Completion Days:** 0 **Workover Days:** 0

17-Feb-09

Current Depth (ft): 1,311 **Hole Drilled (ft):** 384 **Ave ROP:**

Current Ops: 0000-0600 Laid down bad shock sub. Changed out bad suction hose on mud pump #2. Made up new bit and scribed mud motor. Ran in the hole picking up new shock sub. Shallow test the mud motor.

Operation Summary:

Directional drilled 12 1/4" hole with mud motor and MWD assembly from 927' to 1131'. (8 hrs)

Replaced O-ring on upper union on the stand pipe. (1.5 hrs)

Directional drilled 12 1/4" hole from 1131' to 1192'. (2.5 hrs)

Replaced O-ring on lower union on the stand pipe. (2 hrs)

Continued to directional drill from 1192' to 1311'. (6 hrs)

Circulated and cleaned the hole. (0.5 hrs)

Pulled out of the hole laying down bad shock sub and breaking the bit. (3.5 hrs)

Comments: Directional drilled 12 1/4" hole with mud motor / MWD assembly from 927' to 1131'. Replaced O-ring on upper union on the stand pipe. Directional drill from 1131' to 1192'. Replaced O-ring on lower stand pipe union. Continued to directional drill from 1192' to 1311', penetration fell off. Pulled out of the hole for new bit.

Mud Data: MW: 9.2 Viscosity: 51 Filtrate: 6.8

Surveys: 954ft - 4.9 deg Inc, 113.16 deg Az; 985ft - 6.4 deg Inc, 101.9 deg Az; 1015ft - 7.06 deg Inc, 99.42 deg Az; 1046ft - 7.7 deg Inc, 93.9 deg Az; 1077ft - 8.75 deg Inc, 92.56 deg Az; 1108ft - 10.05 deg Inc, 93.39 deg Az; 1170ft - 12.85 deg Inc, 92.9 deg Az; 1201ft - 13.66 deg Inc, 94.61 deg Az; 1232ft - 14.72 deg Inc, 95.86 deg Az;

Daily Costs (\$): 60,457 **Well Costs (\$):** 1,269,838

Drilling Days: 20 **Completion Days:** 0 **Workover Days:** 0

18-Feb-09

Current Depth (ft): 1,486 **Hole Drilled (ft):** 175 **Ave ROP:**

Current Ops: 0000-0600 Directional drilled 12 1/4" hole from 1486' to 1567'. (One hour changing head and liner in #2 mud pump)

Operation Summary:

Finish pulling out of the hole laying down bad shock sub and breaking the bit #2. (1 hrs)

Replaced suction hose on #2 mud pump. (2 hrs)

Adjust AKO on the mud motor. Made up stab on top of the mud motor. Made up new 12 1/4" bit.

Scribed directional tools and shallow tested the directional equipment. (3 hrs)

Ran in the hole with the rest of the bottom hole assembly to 601'. (3 hrs)

Replaced the O-ring in the standpipe. (1 hrs)

Ran in the hole to 1065'. (1 hrs)

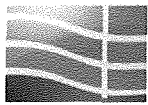
Spot reamed from 1065' to bottom at 1311'. (1 hrs)

Started to directional drill at 1311' to 1330'. Blew pop off on #1 mud pump. (1 hrs)

Repaired pop off on #1 mud pump. (2 hrs)

Directional drill 12 1/4" hole from 1330' to 1486'. (8 hrs)

Changed two heads in mud pumps. (1 hrs)



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Comments: Finished pulling out of the hole, laid down bad shock sub and broke the bit. Changed out suction hose on #2 mud pump. Made up new bit #3 and picked up stab on top of the mud motor. Scribed mud motor. Shallow test directional equipment. Ran in the hole with rest of 12 1/4" mud motor/ MWD assembly the hole to 1065'. Spot reamed from 1065' to bottom at 1311'. Directional drill 12 1/4" hole from 1311' to 1330', blew pop off on #1 mud pump. Repaired #1 mud pump pop off. Continue to directional drill from 1330' to 1486'. Changed out two heads in the mud pumps.

Mud Data: MW: 9.4 Viscosity: 55 Filtrate: 6.2

Surveys: 1262ft - 15.92 deg Inc, 94.53 deg Az; 1292ft - 16.8 deg Inc, 94.47 deg Az; 1323ft - 16.7 deg Inc, 95.24 deg Az; 1353ft - 16.6 deg Inc, 99.63 deg Az; 1385ft - 16.17 deg Inc, 103.89 deg Az; 1416ft - 16.13 deg Inc, 106.86 deg Az; 1447ft - 16.47 deg Inc, 106.98 deg Az; 1477ft - 16.96 deg Inc, 105.13 deg Az;

Daily Costs (\$): 81,207 **Well Costs (\$):** 1,351,045

Drilling Days: 21 **Completion Days:** 0 **Workover Days:** 0

19-Feb-09

Current Depth (ft): 1,751 **Hole Drilled (ft):** 265 **Ave ROP:**

Current Ops: 0000-0600 Pulled out of the hole laying down the directional tools and all excess drill collars not needed for the reaming run.

Operation Summary:

Directional drilled 12 1/4" hole from 1486' to 1520'. (2 hrs)
 Changed head and liner in #2 mud pump. (1 hrs)
 Directional drilled 12 1/4" hole from 1520' to 1710'. (14 hrs)
 Circulated and got cutting sample up. (0.5 hrs)
 Continued to directional drill 12 1/4" hole from 1710' to 1751'. (3.5 hrs)
 Circulated hole clean and took final directional survey. (1 hrs)
 Pulled out of the hole laying down drill pipe to ream with. (2 hrs)

Comments: Directional drill 12 1/4" hole from 1486' to 1520'. Changed out head and liner in #2 mud pump. Continue to directional drill from 1520' to 1710'. Circulated bottom hole sample up to pick the casing point. Continued to directional drill to 1751'. Circulated hole clean. Started out of the hole with 12 1/4" directional assembly laying down drill pipe to ream with.

Mud Data: MW: 9.4 Viscosity: 57 Filtrate: 6.1

Surveys: None

Daily Costs (\$): 62,429 **Well Costs (\$):** 1,413,473

Drilling Days: 22 **Completion Days:** 0 **Workover Days:** 0

20-Feb-09

Current Depth (ft): 1,751 **Hole Drilled (ft):** **Ave ROP:**

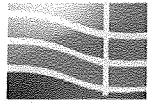
Current Ops: 0000-0600 Circulated and conditioned mud. Whiped the hole up to 479'. Ran in the hole to bottom at 1751'. Circulated bottoms up. Pulled out of the hole to run 9 5/8" casing laying down roller reamers. Started to rig up to run casing.

Operation Summary:

Pulled out of the hole and laid down all excess drill collar not needed for reaming assembly. Laid down all the directional tools. (6 hrs)
 Changed out bottom steel 5" pipe rams for 10 3/4" casing rams. (3 hrs)
 Made up 12 1/4" reaming assembly. Installed rotating rubber. (3 hrs)
 Changed out old kelly spinner for new kelly spinner. (2.5 hrs)
 Ran in the hole to 924'. (0.5 hrs)
 Spot reamed 12 1/4" directional from 924' to bottom at 1751'. (8.5 hrs)
 Circulated and conditioned mud. (0.5 hrs)

Comments: Pulled out of the hole and laid down all excess drill collar not needed for reaming assembly. Laid down all the directional tools. Changed out bottom 5" steel rams for 10 3/4" casing rams. Made up reaming assembly. Changed out bad kelly spinner for new one. Continued in the hole and spot reamed directional hole from 927' to bottom at 1751'. Circulated and conditioned mud.

Well Summary Report		Calpine	
Well ID: Happy Jack 12		Well Name: Happy Jack 12	
Field: Geysers		Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
Mud Data: MW: 9.4 Viscosity: 52 Filtrate: 6.3			
Surveys: None			
Daily Costs (\$): 105,788		Well Costs (\$): 1,519,261	
Drilling Days: 23		Completion Days: 0 Workover Days: 0	
21-Feb-09	Current Depth (ft): 1,751	Hole Drilled (ft):	Ave ROP:
<p>Current Ops: 0000-0600 Waited on cement. Did 1 1/2 barrel cement top job on 9 5/8" casing. While waiting on cement four bolted stack to be lifted. Slacked off of 9 5/8" casing and rigged up to lift the stack.</p> <p>Operation Summary: Circulated and conditioned mud. (0.5 hrs) Wiped hole up to the 13 3/8" casing at 500'. (1.5 hrs) Circulated and condition mud per mud engineers instructions. (1 hrs) Pulled out of the hole laying down roller reamers. (2.5 hrs) Rigged up to run 9 5/8" casing. (1.5 hrs) Held safety tailboard meeting on running casing. (0.5 hrs) Ran 42 joints of 9 5/8" 43.5# butt. and 2 joints of 10 3/4" 40.5# butt casing with the shoe at 1725'. (5.5 hrs) Circulated casing. Rigged up and reversed circulated the casing. (2.5 hrs) Held tailboard safety meeting on cementing 9 5/8" casing. (0.5 hrs) Cemented 9 5/8" casing down backside. Continued pumping after closing casing head valve in at 114 bbls until pressure got to 150psi.. Opened wellhead wing valve and continued pumping until we got cement to surface. Total cement pumped was 130 bbls. (2 hrs) Waited on cement. Cleaned celler and made ready to lift the blowout preventers to cut off. (6 hrs)</p> <p>Comments: Circulated and conditioned the mud. Wiped the hole up to the 13 3/8" casing at 500'. Circulated bottom up. Pulled out of the hole laying down the roller reamers. Rigged up casers. Held tailboard meeting on running 9 5/8" casing. Ran 42 joints of 9 5/8" 43.5# butt. and 2 joints of 10 3/4" 40.5# butt casing with the shoe at 1725'. Circulated casing. Rigged up and reversed circulated the casing. Held tail board on reversed circulated cement job. Cement casing with 130 bbls of cement. Cemented 9 5/8" casing down back side. Continued pumping after closing casing head valve in at 114 bbls until pressure got to 150psi.. Opened wellhead wing valve and continued pumping until we got cement to surface. Total cement pumped was 130 bbls. Continued pumping after closing casing in at 114 bbls and got cement to surface. Waited on cement.</p> <p>Mud Data: MW: 9.4 Viscosity: 40 Filtrate: 6.1 Surveys: None</p> <p>Daily Costs (\$): 210,414 Well Costs (\$): 1,729,675 Drilling Days: 24 Completion Days: 0 Workover Days: 0</p>			
22-Feb-09	Current Depth (ft): 1,751	Hole Drilled (ft):	Ave ROP:
<p>Current Ops: 0000-0600 Continued to hammer up blowout preventers. Set in rotating head and hooked up the flow line. Installed turnbuckles and centered the stack. Started laying down 8" drill collars out of the derrick.</p> <p>Operation Summary: Waited on cement. Did 1 1/2 barrel cement top job on casing. While waiting on cement four bolted stack to be lifted. (5.5 hrs) Slacked off casing and broke out cementing head. (0.5 hrs) Picked up 4 ways and tied on to and lifted the blowout preventers. Made rough cut on the 10 3/4" casing. (2 hrs) Set blowout preventers back down and removed 10 3/4" casing cut off. Removed rotating head bowl. (1 hrs) Lifted blowout preventer up and secured them with safety slings. (1 hrs) Pumped and cleaned celler for welders. (1 hrs) Made final cut, dressed 10 3/4" casing and welded wellhead flange on. (5 hrs)</p>			



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Finished installing first part of the blooie line while wellhead cooled. (1 hrs)
 Tested 10 3/4" wellhead flange to 500 psi., good test. (0.5 hrs)
 Installed mud cross, master valve and x/o spool. Set blowout preventers down. Nipped up blowout preventers. (4.5 hrs)
 Changed out 10 3/4" casing rams for 5" steel rams in the bottom single gate. (2 hrs)

Comments: Waited on cement. Did 1 1/2 barrel cement top job on casing. While waiting on cement four bolted stack to be lifted. Slacked off of the casing and rigged up to lift the stack. Rigged up and lifted blowout preventers. Made rough cut casing. Set blowout preventers back down. Laid out 10 3/4" stub. Picked blowout preventers back up and secured with safety slings. Welded on 10 3/4" wellhead flang (10 - 300). Tested well head to 500 psi. Set in first part of the blooie line. Stacked out blowout preventers and nipped up. Changed casing rams for 5" steel rams in bottom single gate.

Mud Data: MW: 9.4 Viscosity: 42 Filtrate: 6.8

Surveys: None

Daily Costs (\$):	60,266	Well Costs (\$):	1,789,941
Drilling Days:	25	Completion Days:	0
		Workover Days:	0

23-Feb-09	Current Depth (ft):	1,751	Hole Drilled (ft):	Ave ROP:
	Current Ops:	00:00 to 06:00 Nipped up yhe Blooie line and rigged for air drilling.		
	Operation Summary:	Nipple up the B.O.P. (4.5 hrs) Test the B.O.P. and casing to 500 psi. (0.5 hrs) Laid down 8" drill collars. (1.5 hrs) Serviced the rig. (0.5 hrs) Tested the B.O.P. blind rams with D.O.G. to 500 psi. (1 hrs) Picked up the drilling assembly with an 8 1/2" mill tooth bit. (4 hrs) Ran in the hole and tagged cement at 1437'. (1 hrs) Laid down working pipe. (1 hrs) Circulated the hole clean and tested the pipe rams to 500 psi. (1 hrs) Cleaned out cement from 1437' to 1751'. (4.5 hrs) Hauled mud away and cleaned the pill pit and filled with water and displaced tthe mud out of the hole. (2 hrs) Pulled out of the hole and laid down the mill tooth bit. (1.5 hrs) Nipped down the flow line and blanked off the flow line flange. (1 hrs)		
	Comments:	Nipple up the B.O.P. Test the B.O.P. and casing to 500 psi. Laid down 8" drill collars. Serviced the rig. Tested the B.O.P. blind rams with D.O.G. to 500 psi. Picked up the drilling assembly with an 8 1/2" mill tooth bit. Ran in the hole and tagged cement at 1437'. Laid down working pipe. Circulated the hole clean and tested the pipe rams to 500 psi. Cleaned out cement from 1437' to 1751'. Hauled mud away and cleaned the pill pit and filled with water and displaced tthe mud out of the hole. Pulled out of the hole and laid down the mill tooth bit. Nipped down the flow line and blanked off the flow line flange.		
	Mud Data:	MW: 9.2 Viscosity: 34 Filtrate: 14		
	Surveys:	None		
	Daily Costs (\$):	89,561	Well Costs (\$):	1,879,502
	Drilling Days:	26	Completion Days:	0
			Workover Days:	0
24-Feb-09	Current Depth (ft):	1,751	Hole Drilled (ft):	0
	Current Ops:	00:00 to 06:00 Made up drilling assembly and ran in the hole blowing the well dry.		
	Operation Summary:	Nipped up the blooie line and circulating system and rigged up for air drilling. (22 hrs) Made up 8 1/2" drilling assembly. (2 hrs)		
	Comments:	Nipped up the blooie line and circulating system and rigged up for air drilling. Made up 8		



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

		1/2" drilling assembly.			
Mud Data:		None			
Surveys:		None			
Daily Costs (\$):		67,720	Well Costs (\$):	1,947,222	
Drilling Days:		27	Completion Days:	0	Workover Days: 0
25-Feb-09	Current Depth (ft):	2,155	Hole Drilled (ft):	404	Ave ROP: 29.9
Current Ops: 00:00 to 06:00 Drilled from 2155' to 2245'.					
Operation Summary:					
Ran in the hole making up the drilling assembly. (1.5 hrs)					
Ran in the hole blowing the well dry with air to 1751'. (7.5 hrs)					
Drilled 8 1/2" hole with air from 1751' to 1948'. (5.5 hrs)					
Circulated and surveyed at 1890'. (1.5 hrs)					
Drilled 8 1/2" hole with air from 1948' to 2155'. (8 hrs)					
Comments: Ran in the hole making up the drilling assembly. Ran in the hole blowing the well dry with air to 1751'. Drilled 8 1/2" hole with air from 1751' to 1948'. Circulated and surveyed at 1890'. Drilled 8 1/2" hole with air from 1948' to 2155'.					
Mud Data:		None			
Surveys:		1890ft - 19.6 deg Inc, 110 deg Az; 2146ft - 18.5 deg Inc, 112.9 deg Az;			
Daily Costs (\$):		89,072	Well Costs (\$):	2,036,294	
Drilling Days:		28	Completion Days:	0	Workover Days: 0
26-Feb-09	Current Depth (ft):	2,615	Hole Drilled (ft):	460	Ave ROP: 30.7
Current Ops: 00:00 to 06:00 Changed the botton hole assembly configurations and ran in the hole to 2538'. Reamed from 2538' to 2615' and drilled to 2639'.					
Operation Summary:					
Drilled 8 1/2" hole with air from 2155' to 2194'. (2 hrs)					
Circulated and surveyed at 2146'. (1.5 hrs)					
Drilled 8 1/2" hole with air from 2194' to 2469'. (9.5 hrs)					
Circulated and surveyed at 2421'. (1 hrs)					
Drilled 8 1/2" hole with air from 2469' to 2615'. (3.5 hrs)					
Circulated and surveyed at 2567'. (1 hrs)					
Pulled out of the hole for a new bit and a BHA change. (4 hrs)					
Serviced the rig. (0.5 hrs)					
Made up new bit # 6 and changed the bottom hole assembly configurations. (1 hrs)					
Comments: Drilled 8 1/2" hole with air from 2155' to 2194'. Circulated and surveyed at 2146'. Drilled 8 1/2" hole with air from 2194' to 2469'. Circulated and surveyed at 2421'. Drilled 8 1/2" hole with air from 2469' to 2615'. Circulated and surveyed at 2567'. Pulled out of the hole for a new bit and a BHA change. Serviced the rig. Made up new bit # 6 and changed the bottom hole assembly configurations.					
Mud Data:		None			
Surveys:		2421ft - 17.2 deg Inc, 111 deg Az; 2567ft - 15.7 deg Inc, 112 deg Az;			
Daily Costs (\$):		53,354	Well Costs (\$):	2,089,648	
Drilling Days:		29	Completion Days:	0	Workover Days: 0
27-Feb-09	Current Depth (ft):	2,863	Hole Drilled (ft):	248	Ave ROP: 24.8
Current Ops: 00:00 to 06:00 Pulled out of the hole and changed the bottom hole assembly configuration and ran back in the hole.					
Operation Summary:					
Ran in the hole with bit # 6 to 2538'. Changed rotating rubber. (4.5 hrs)					
Safety reamed from 2538' to 2615'. (1 hrs)					
Drilled 8 1/2" hole with air from 2615' to 2762'. (5.5 hrs)					



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Circulated for surveying at 2762'. (0.5 hrs)
 Ran six deviation surveys at 2724'. Had three bad instruments. (4.5 hrs)
 Drilled 8 1/2" hole with air from 2762' to 2853'. (4 hrs)
 Circulated and surveyed at 2817'. (1 hrs)
 Drilled 8 1/2" hole with air from 2853' to 2863'. (0.5 hrs)
 Circulated the hole clean. (0.5 hrs)
 Pulled out of the hole for a bottom hole assembly change. (2 hrs)

Comments: Ran in the hole with bit # 6 to 2538'. Changed rotating rubber. Safety reamed from 2538' to 2615'. Drilled 8 1/2" hole with air from 2615' to 2762'. Circulated for surveying at 2762'. Ran six deviation surveys at 2724'. Had three bad instruments. Drilled 8 1/2" hole with air from 2762' to 2853'. Circulated and surveyed at 2817'. Drilled 8 1/2" hole with air from 2853' to 2863'. Circulated the hole clean. Pulled out of the hole for a bottom hole assembly change.

Mud Data: None

Surveys: 2724ft - 18 deg Inc, 115 deg Az; 2817ft - 19.5 deg Inc, 104 deg Az;

Daily Costs (\$):	48,191	Well Costs (\$):	2,137,839
Drilling Days:	30	Completion Days:	0
		Workover Days:	0

28-Feb-09	Current Depth (ft):	3,187	Hole Drilled (ft):	324	Ave ROP:	24.9
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Current Ops: 00:00 to 06:00 Drilled to 3326'.

Operation Summary:

Pulled out of the hole for a bottom hole assembly change. (1 hrs)
 Changed the bottom hole assembly configuration and ran in the hole with bit # 7 to 2660'. (5.5 hrs)
 Reamed from 2660' to 2863'. (2.5 hrs)
 Drilled 8 1/2" hole with air from 2863' to 2990'. Steam entries at 2930' with 8 # pressure increase. (5 hrs)
 Circulated and surveyed at 2954'. (1 hrs)
 Drilled 8 1/2" hole with air from 2990' to 3082'. (4 hrs)
 Circulated and surveyed at 3039'. (1 hrs)
 Drilled 8 1/2" hole with air from 3082' to 3187'. Steam entries at 3143' with 5 # pressure increase. (4 hrs)

Comments: Pulled out of the hole for a bottom hole assembly change. Changed the bottom hole assembly configuration and ran in the hole with bit # 7 to 2660'. Reamed from 2660' to 2863'. Drilled 8 1/2" hole with air from 2863' to 2990'. Steam entries at 2930' with 8 # pressure increase. Circulated and surveyed at 2954'. Drilled 8 1/2" hole with air from 2990' to 3082'. Circulated and surveyed at 3039'. Drilled 8 1/2" hole with air from 3082' to 3187'. Steam entries at 3143' with 5 # pressure increase.

Mud Data: None

Surveys: 3039ft - 20.5 deg Inc, 105 deg Az;

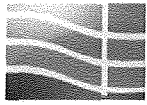
Daily Costs (\$):	62,886	Well Costs (\$):	2,200,725
Drilling Days:	31	Completion Days:	0
		Workover Days:	0

01-Mar-09	Current Depth (ft):	3,724	Hole Drilled (ft):	537	Ave ROP:	26.2
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Current Ops: 00:00 to 06:00 Pulled out of the hole

Operation Summary:

Drilled 8 1/2" hole with air from 3187' to 3326'. (5 hrs)
 Circulated and surveyed at 3283'. Survey picture was bad. (1 hrs)
 Drilled 8 1/2" hole with air from 3326' to 3336'. (1 hrs)
 Circulated and resurveyed at 3290'. (1.5 hrs)
 Drilled 8 1/2" hole with air from 3336' to 3571'. (7 hrs)
 Circulated and surveyed at 3535'. (1 hrs)
 Drilled 8 1/2" hole with air from 3571' to 3724'. (7.5 hrs)



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Comments: Drilled 8 1/2" hole with air from 3187' to 3326'. Circulated and surveyed at 3283'. Survey picture was bad. Drilled 8 1/2" hole with air from 3326' to 3336'. Circulated and resurveyed at 3290'. Drilled 8 1/2" hole with air from 3336' to 3571'. Circulated and surveyed at 3535'. Drilled 8 1/2" hole with air from 3571' to 3724'.
 Restricted Air on: 15,200#/hr, H2S= 20ppm, 0.3#/hr. NH3=80 ppm, 3#/hr
 Restricted Air off: 15,200#/hr H2S=151ppm, 2.3#/hr. NH3=80 ppm, 3 #/hr
 Unrestricted 23,200#/hr H2S=151ppm, 3.5#/hr. NH3=80ppm, 4.6 #/hr

Mud Data: None

Surveys: 3290ft - 18.5 deg Inc, 103 deg Az; 3535ft - 16 deg Inc, 103 deg Az;

Daily Costs (\$): 40,389 **Well Costs (\$):** 2,241,114

Drilling Days: 32 **Completion Days:** 0 **Workover Days:** 0

02-Mar-09

Current Depth (ft): 3,790 **Hole Drilled (ft):** 66 **Ave ROP:** 26.4

Current Ops: 0000-0600 Drilled 8 1/2" hole with building assembly from 3790' to 3874'. Blew and cleaned the hole. Took directional survey at 3850'.

Operation Summary:

Blew and cleaned hole for wireline directional survey. (0.5 hrs)
 Took two failed directional surveys. (1.5 hrs)
 Pulled out of the hole with bit # 7. (6 hrs)
 Changed out venturi spool for the spider spool. (4 hrs)
 Broke down locked up drilling assembly. (1.5 hrs)
 Made up new building assembly with rerun bit #6 and ran in hole with the bottom hole assembly. (2.5 hrs)
 Installed new rotating rubber. (1 hrs)
 Continued in the hole tagging up at 3651'. (1 hrs)
 Reamed 8 1/2" hole with air from 3651' to bottom at 3724'. (2.5 hrs)
 Blew and cleaned hole. Took wireline directional survey at 3668' with new directional equipment. (1 hrs)
 Drilled 8 1/2" hole with air from 3724' to 3790'. (2.5 hrs)

Comments: Blew and cleaned hole. Took directional survey at 3680', no good. Retook survey at 3680', no good again. Pulled out of the hole with bit #7. Changed out venturi spool for spider spool (water injection spool). Made up building 8 1/2" bottom hole assembly and ran in the hole. Reamed from 3651' to bottom at 3724'. Blew hole clean and took wireline directional survey with new survey equipment at 3668'. Drilled 8 1/2" hole with air from 3724' to 3790'.

Restricted Air on: 15,200#/hr, H2S= 20ppm, 0.3#/hr. NH3=80 ppm, 3#/hr
 Restricted Air off: 15,200#/hr H2S=151ppm, 2.3#/hr. NH3=80 ppm, 3 #/hr
 Unrestricted 23,200#/hr H2S=151ppm, 3.5#/hr. NH3=80ppm, 4.6 #/hr

Mud Data: None

Surveys: 3668ft - 15.75 deg Inc, 103 deg Az; 3852ft - 17.25 deg Inc, 102 deg Az;

Daily Costs (\$): 90,240 **Well Costs (\$):** 2,331,354

Drilling Days: 33 **Completion Days:** 0 **Workover Days:** 0

03-Mar-09

Current Depth (ft): 4,081 **Hole Drilled (ft):** 291 **Ave ROP:** 26.5

Current Ops: 0000-0600 Slipped and cut the drilling line. Made up bit and installed rotating rubber. Made up new locked up bottom hole assembly. Ran in the hole to 776'. Changed out worn rotating rubber for new one.

Operation Summary:



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Drilled 8 1/2" hole with air from 3790' to 3874'. (4 hrs)
 Blew and cleaned the hole. (0.5 hrs)
 Took wireline directional survey at 3852', no good. Resurveyed, got good picture. (1.5 hrs)
 Drilled 8 1/2" hole from 3874' to 4049'. (6 hrs)
 Blew and cleaned hole. (0.5 hrs)
 Took directional wireline survey at 3993', no good. (0.5 hrs)
 Drilled from 4049' to 4081' while changing out survey gear. (1 hrs)
 Blew and cleaned hole for survey. (0.5 hrs)
 Resurveyed at 4033', good picture. (1 hrs)
 Pulled out of the hole laying down 39 joints of slick drill pipe. (8 hrs)
 Started to slip and cut the drilling line. (0.5 hrs)

Comments: Drilled 8 1/2" hole with air from 3790' to 3874'. Blew, cleaned the hole and took directional wireline survey 3874', no good. Resurveyed and got good picture. Drilled 8 1/2" hole from 3874' to 4049'. Blew, cleaned the hole and took directional wireline survey at 3993', no good. Drill from 4049' to 4081' while checking out survey equipment. Resurveyed at 4033', good survey. Pulled out of the hole laying down 39 joints of slick drill pipe. Broke down building bottom hole assembly. Started to slip and cut the drilling line.

Restricted Air on: 15,200#/hr, 3#/hr	H2S= 20ppm,	0.3#/hr.	NH3=210 ppm,
Restricted Air off: 15,200#/hr #/hr	H2S=151ppm,	2.3#/hr.	NH3=210 ppm, 3
Unrestricted 23,200#/hr #/hr	H2S=151ppm,	3.5#/hr.	NH3=210ppm, 4.6

Mud Data: None

Surveys: None

Daily Costs (\$): 66,651	Well Costs (\$): 2,398,005
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Drilling Days: 34	Completion Days: 0	Workover Days: 0
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04-Mar-09

Current Depth (ft): 4,350	Hole Drilled (ft): 269	Ave ROP: 24.5
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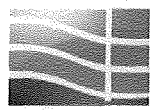
Current Ops: 0000-0600 Drilled 8 1/2" hole with air from 4372' to 4493' taking a wireline directional survey at 4312'.

Operation Summary:

Slipped and cut the drilling line. (1 hrs)
 Made up new bottom hole assembly and ran in the hole to 776'. (4 hrs)
 Changed out worn rotating rubber for new one. (0.5 hrs)
 Laid down bad drill pipe out of the derrick in the mouse hole. (1 hrs)
 Ran in the hole picking up 40 joint of newly hardbanded drill pipe tagging up at 3993'. (5 hrs)
 Reamed from 3993' to bottom at 4081'. (0.5 hrs)
 Drilled 8 1/2" hole with air from 4081' to 4219'. (6 hrs)
 Blew hole clean and took wireline directional survey at 4159'. (1 hrs)
 Continued to drill 8 1/2" hole from 4219' to 4350'. (5 hrs)

Comments: Slipped and cut the drilling line. Made up bit #8 and installed rotating rubber. Made up new locked up bottom hole assembly. Ran in the hole to 776'. Changed out worn rotating rubber for new one. Laid down bad drill pipe out of the derrick. Loaded rack with replacement drill pipe for slick pipe laid down. Ran in the hole picking up 40 joints of good drill pipe. Continued up in the hole with drill pipe out of the derrick tagging up at 3993'. Reamed from 3993' to bottom at 4081'. Drill 8 1/2" hole with air from 4081' to 4219'. Blew hole clean and took a wireline directional survey at 4159'. Continued to drill 8 1/2" hole to 4350'.

Restricted Air on: 8,700#/hr, 1.7#/hr	H2S= 9ppm,	0.3#/hr.	NH3=210 ppm,
Restricted Air off: 8,700#/hr 1.7#/hr	H2S=174ppm,	2.3#/hr.	NH3=210 ppm,



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Unrestricted 12,000#/hr H2S= 9ppm, 3.5#/hr. NH3=210ppm, 2.4 #/hr

Mud Data: None

Surveys: 4036ft - 22.25 deg Inc, 92 deg Az; 4159ft - 23.25 deg Inc, 90 deg Az;

Daily Costs (\$): 42,158 Well Costs (\$): 2,440,163

Drilling Days: 35 Completion Days: 0 Workover Days: 0

05-Mar-09

Current Depth (ft): 4,752 Hole Drilled (ft): 402 Ave ROP: 22.3

Current Ops: 0000-0600 Continued to pull out of the hole laying down a total of 27 slick joints of drill pipe. Rigged up and started to inspect the bottom hole assembly.

Operation Summary:

Drilled 8 1/2" hole with air from 4350' to 4372'. (1 hrs)
Blew and cleaned hole for survey. (0.5 hrs)
Took wireline survey at 4316', readable. (0.5 hrs)
Drilled 8 1/2" hole from 4372' to 4618'. (10 hrs)
Blew and cleaned hole for survey. (0.5 hrs)
Took two directional wireline surveys at 4558', both not readable. (0.5 hrs)
Drilled 8 1/2" from 4618' to 4649'. (1.5 hrs)
Blew and cleaned hole for survey. (0.5 hrs)
Took wireline directional survey at 4588', readable. (0.5 hrs)
Drilled 8 1/2" hole from 4649' to 4752'. (5.5 hrs)
Blew hole while rigging up new digital survey equipment. (0.5 hrs)
Took directional wireline survey at 4680, good. (0.5 hrs)
Pulled out of the hole sorting and laying out slick drill pipe. (2 hrs)

Comments: Drilled 8 1/2" hole with air from 4350' to 4372'. Blew and cleaned the hole, took directional wireline survey at 4316', readable. Drilled 8 1/2" hole from 4372' to 4618'. Blew and cleaned the hole and took directional wireline survey at 4558'. Took two surveys, both bad. Drilled from 4618' to 4649'. Blew hole and took directional wireline survey at 4588', readable survey. Drilled 8 1/2" hole from 4649' to 4752'. Blew and cleaned hole while rigging up new digital survey equipment. Took directional wireline survey at 4680', good. Pulled out of the hole with bit #8 sorting out and laying down slick drill pipe.

Restricted Air on: 8,700#/hr, H2S= 9ppm, 0.1#/hr. NH3=210 ppm, 1.7#/hr
Restricted Air off: 8,700#/hr H2S= 71ppm, 0.6#/hr. NH3=210 ppm, 1.7#/hr
Unrestricted 12,100#/hr H2S= 9ppm, 0.1#/hr. NH3=210ppm, 2.4 #/hr

Mud Data: None

Surveys: 4372ft - 23 deg Inc, 90 deg Az;

Daily Costs (\$): 37,979 Well Costs (\$): 2,478,142

Drilling Days: 36 Completion Days: 0 Workover Days: 0

06-Mar-09

Current Depth (ft): 4,799 Hole Drilled (ft): 47 Ave ROP: 23.5

Current Ops: 0000-0600 Drilled from 4799' to 4922'. Blew hole clean and surveyed at 4862'. Continued to drill from 4922' to 4954'.

Operation Summary:

Pulled out of the hole to the bottom hole assembly laying down 27 joints of slick drill pipe. (2.5 hrs)
Serviced the rig. (0.5 hrs)
Rigged up inspectors and inspected bottom hole assembly laying down bad lead collar and monel. Broke and inspected savor sub bottom of the kelly. (9 hrs)
Ran in the hole picking up 27 joint of replacement drill pipe for slick drill pipe laid down. Tagged up at 4420'. (5.5 hrs)



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Reamed out of gauge hole from 4420' to bottom at 4752'. (4.5 hrs)

Drilled 8 1/2" hole with air from 4752' to 4799'. (2 hrs)

Comments: Continued to pull out of the hole laying down a total of 27 slick joints of drill pipe. Changed out old jars for new jars. Rigged up and inspect the bottom hole assembly. Laid out bad lead collar and monel. Made up new locked up bottom hole assembly and ran in the hole picking up 27 joints of replacement drill pipe for slick pipe laid down. Tagged up at 4420'. Reamed out of gauge hole from 4420' to bottom at 4752'. Drilled 8 1/2" hole with air from 4752' to 4799'.

Restricted Air on: 5,600#/hr, 1.1#/hr	H2S= 20ppm, 0.1#/hr.	NH3=210 ppm,
Restricted Air off: 5,600#/hr, 1.1#/hr	H2S= 71ppm, 0.4#/hr.	NH3=210 ppm,
Unrestricted 8,700#/hr 1.5 #/hr	H2S= 20ppm, 0.2#/hr.	NH3=210ppm,

Mud Data: None

Surveys: 4588ft - 22.25 deg Inc, 92 deg Az; 4680ft - 21.3 deg Inc, 90.8 deg Az;

Daily Costs (\$): 76,578 **Well Costs (\$):** 2,554,720

Drilling Days: 37 **Completion Days:** 0 **Workover Days:** 0

07-Mar-09

Current Depth (ft): 5,320 **Hole Drilled (ft):** 521 **Ave ROP:** 28.2

Current Ops: 0000-0600 Pulled out of the hole with bit #9 laying down 15 joints of slick drill pipe. Broke bit and laid down worn stabs.

Operation Summary:

Drilled 8 1/2" hole with air from 4799' to 4922'. (3 hrs)
 Blew the hole clean and took directional wireline survey at 4862'. (1 hrs)
 Drilled 8 1/2" hole from 4922' to 5137'. (8.5 hrs)
 Blew the hole clean and took directional wireline survey at 5077'. (1 hrs)
 Clean out fill from 5107' back to botom at 5137'. (0.5 hrs)
 Drilled 8 1/2" hole from 5137' to 5249'. (3.5 hrs)
 Worked pipe and repaired leak in the circulating system line. (0.5 hrs)
 Drill 8 1/2" hole from 5249' to 5291'. (2 hrs)
 Blew hole clean and took directional wireline survey at 5231'. (1 hrs)
 Cleaned out fill from 5251' to 5291'. (0.5 hrs)
 Drilled 8 1/2" hole from 5291' to 5319', started seeing excessive torque. (1.5 hrs)
 Blew and cleaned the hole. (0.5 hrs)
 Started pulling out of the hole. (0.5 hrs)

Comments: Drilled 8 1/2" hole with air from 4799' to 4922'. Blew hole clean and took wireline directional survey at 4862'. Drilled 8 1/2" hole from 4922' to 5137'. Blew hole clean and took directional wireline survey at 5077'. Cleaned out fill from 5107' to 5137'. Drilled 8 1/2" hole from 5137' to 5249'. Worked pipe and repaired hole in circulating system line. Continued to drill from 5249' to 5291'. Blew the hole clean and took directional wireline survey at 5231'. Reamed and cleaned fill from 5231' back to bottom at 5291'. Drilled from 5291' to 5319', bit started torquing. Blew hole clean and started out of the hole.

Restricted Air on: 10,900#/hr, 2.2#/hr	H2S= 9ppm, 0.1#/hr.	NH3=210 ppm,
Restricted Air off: 10,900#/hr, 2.2#/hr	H2S= 71ppm, 0.8#/hr.	NH3=210 ppm,
Unrestricted 15,100#/hr 3.0#/hr	H2S= 9ppm, 0.1#/hr.	NH3=210ppm,

Mud Data: None

Surveys: 4862ft - 20.6 deg Inc, 83.8 deg Az; 5077ft - 18.9 deg Inc, 83.5 deg Az;

Daily Costs (\$): 62,008 **Well Costs (\$):** 2,616,728



Well Summary Report

Calpine

Well ID: Happy Jack 12

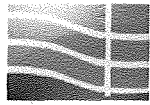
Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Drilling Days: 38		Completion Days: 0		Workover Days: 0	
08-Mar-09	Current Depth (ft): 5,500	Hole Drilled (ft): 180	Ave ROP: 36.0		
Current Ops: 0000-0600 Drilled 8 1/2" hole with air from 5500' to 5623'.					
Operation Summary:					
Pulled out of the hole laying down 15 joints of slick drill pipe. Broke and laid out bit #9 and worn stabs. (4.5 hrs)					
Made up bit #10 and new bottom hole assembly. (2.5 hrs)					
Installed new rotating rubber. (1 hrs)					
Ran in the hole tagging up at 5065'. (2.5 hrs)					
Reamed out of gauge hole from 5065' to bottom at 5319'. (3.5 hrs)					
Drilled 8 1/2" hole with air from 5319' to 5438'. (4 hrs)					
Blew and cleaned the hole to change rotating rubber. (0.5 hrs)					
Rubber had come off of rotating head. Fished rubber out of blowout preventer and installed new one. (1.5 hrs)					
Drilled 8 1/2" hole with air from 5438' to 5500'. (1 hrs)					
Comments: Pulled out of the hole with bit #9 laying down 15 joints of slick drill pipe. Broke bit and laid down worn stabs. Made up bit #10 and new bottom hole assembly. Ran in the hole tagging up at 5065'. Reamed out of gauge hole from 5065' to bottom at 5319'. Drilled 8 1/2" hole with air from 5319' to 5438'. Blew hole clean and pulled up 90' to change out rotating rubber. Rotating rubber had come off rotating rubber head. Fished rotating rubber out of the blowout preventers and installed new one. Washed back to bottom at 5438'. Drill 8 1/2" hole to 5500'.					
Restricted Air on: 10,900#/hr, H2S= 9 ppm, 0.1#/hr. NH3=210 ppm, 2.2#/hr					
Restricted Air off: 10,900#/hr H2S= 76 ppm, 0.8#/hr. NH3=210 ppm, 2.2#/hr					
Unrestricted 15,100#/hr H2S= 9 ppm, 0.1#/hr. NH3=210 ppm, 3.0#/hr					
Mud Data: None					
Surveys: 5221ft - 18 deg Inc, 84.2 deg Az; 5409ft - 18.1 deg Inc, 82.4 deg Az; 5563ft - 19.9 deg Inc, 80.5 deg Az;					
Daily Costs (\$): 58,377		Well Costs (\$): 2,675,105			
Drilling Days: 39		Completion Days: 0		Workover Days: 0	
09-Mar-09	Current Depth (ft): 5,748	Hole Drilled (ft): 248	Ave ROP: 17.7		
Current Ops: 00:00 to 06:00 Changed the drilling assembly configurations and started running in the hole picking up drill pipe.					
Operation Summary:					
Drilled 8 1/2" hole with air from 5500' to 5623'. (5.5 hrs)					
Circulated and ran a directional wireline survey at 5563'. (1 hrs)					
Drilled 8 1/2" hole with air from 5623' to 5748'. (8.5 hrs)					
Circulated and ran a directional wireline survey at 5693'. (1 hrs)					
Pulled out of the hole for a new bit. Laid down 80 jts. of slick pipe. (6 hrs)					
Changed out the rotating head bearing assembly. (2 hrs)					
Comments: Drilled 8 1/2" hole with air from 5500' to 5623'. Circulated and ran a directional wireline survey at 5563'. Drilled 8 1/2" hole with air from 5623' to 5748'. Circulated and ran a directional wireline survey at 5693'. Pulled out of the hole for a new bit. Changed out the rotating head bearing assembly.					
Restricted Air on: 4100 #/hr H2S= 27 ppm, 0.1#/hr. NH3=210 ppm, 0.8#/hr					
Restricted Air off: 4100 #/hr H2S= 70 ppm, 0.3#/hr. NH3=210 ppm, 0.8#/hr					
Unrestricted 5700#/ hr H2S= 70 ppm, 0.4#/hr. NH3=210 ppm, 1.1#/hr					

Well Summary Report		Calpine	
Well ID: Happy Jack 12		Well Name: Happy Jack 12	
Field: Geysers		Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
Mud Data: None			
Surveys: 5693ft - 21.5 deg Inc, 87.3 deg Az;			
Daily Costs (\$):	42,991	Well Costs (\$):	2,718,096
Drilling Days:	40	Completion Days:	0
		Workover Days:	0
10-Mar-09	Current Depth (ft): 5,898	Hole Drilled (ft): 150	Ave ROP: 15.8
	Current Ops: 00:00 to 06:00 Twisted off the top near bit stabilizer in the BHA. Pulled out of the hole for fishing tools.		
	Operation Summary: Made up new bit and tools and ran in the hole picking up 80 jts of drill pipe. Tagged tight hole at 5115'. (9 hrs) Reamed from 5115' to 5748'. (5.5 hrs) Drilled 8 1/2" hole with air from 5748' to 5898'. (9.5 hrs)		
	Comments: Made up new bit and tools and ran in the hole picking up 80 jts of drill pipe. Tagged tight hole at 5115'. Reamed from 5115' to 5748'. Drilled 8 1/2" hole with air from 5748' to 5898'. Restricted Air on: 4100 #/hr H2S= 27 ppm, 0.1#/hr. NH3=210 ppm, 0.8#/hr Restricted Air off: 4100 #/hr H2S= 70 ppm, 0.3#/hr. NH3=210 ppm, 0.8#/hr Unrestricted 5700#/ hr H2S= 70 ppm, 0.4#/hr. NH3=210 ppm, 1.1#/hr		
	Mud Data: None		
	Surveys: None		
	Daily Costs (\$): 77,676	Well Costs (\$):	2,795,772
	Drilling Days: 41	Completion Days: 0	Workover Days: 0
11-Mar-09	Current Depth (ft): 5,898	Hole Drilled (ft):	Ave ROP:
	Current Ops: 00:00 to 06:00 ran in the hole with the fishing tools.		
	Operation Summary: Pulled out of the hole and laid down twisted off stabilizer and the monel drill collar. (6 hrs) Slip and cut the drilling line. (2 hrs) Made up 8 1/8" concave mill and ran in the hole to 5542'. (6.5 hrs) Circulate and washed down to the top of the fish at 5877'. (1 hrs) Milled on the top of the fish at 5877'. (3 hrs) Pulled out of the hole and laid down the mill. (4.5 hrs) Made up 8" overshot fishing tools. (1 hrs)		
	Comments: Pulled out of the hole and laid down twisted off stabilizer and the monel drill collar. Slip and cut the drilling line. Made up 8 1/8" concave mill and ran in the hole to 5542'. Circulate and washed down to the top of the fish at 5877'. Milled on the top of the fish at 5877'. Pulled out of the hole and laid down the mill. Made up 8" overshot fishing tools. Restricted Air on: 4100 #/hr H2S= 27 ppm, 0.1#/hr. NH3=210 ppm, 0.8#/hr Restricted Air off: 4100 #/hr H2S= 70 ppm, 0.3#/hr. NH3=210 ppm, 0.8#/hr Unrestricted 5700#/ hr H2S= 70 ppm, 0.4#/hr. NH3=210 ppm, 1.1#/hr		
	Mud Data: None		
	Surveys: None		
	Daily Costs (\$): 4,413	Well Costs (\$):	2,800,185
	Drilling Days: 42	Completion Days: 0	Workover Days: 0
12-Mar-09	Current Depth (ft): 5,898	Hole Drilled (ft):	Ave ROP:



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Current Ops: 00:00 to 06:00 Ran in the hole and circulated and washed over the fish from 5877' to 5891'. Pumped soap slugs and pulled out of the hole.

Operation Summary:

Made up 8" overshot and ran in the hole with the BHA. (2 hrs)
Serviced the rig. (0.5 hrs)
Ran in the hole with the overshot to 5849'. (3 hrs)
Circulate and survey at 5827'. (2 hrs)
Cleaned out 32' of fill to the fish and work over the fish at 5877' with overshot and attempt to work free. New drilling jars would not work at all. (3 hrs)
Pulled out of the hole and laid down the overshot. (4.5 hrs)
Serviced the rig. (0.5 hrs)
Waited on fishing tools. (4 hrs)
Made up 18' of washover pipe and ran in the hole. (4.5 hrs)

Comments: Made up 8" overshot and ran in the hole with the BHA. Serviced the rig. Ran in the hole with the overshot to 5849'. Circulate and survey at 5827'. Work over fish at 5877' with overshot and attempt to work free. New drilling jars would not work at all. Cleaned out 32' of fill to the fish and work over the fish at 5877' with overshot and attempt to work free. New drilling jars would not work at all. Pulled out of the hole and laid down the overshot. Serviced the rig. Waited on fishing tools. Made up 18' of washover pipe and ran in the hole.

Mud Data: None

Surveys: 5827ft - 22 deg Inc, deg Az;

Daily Costs (\$):	74,620	Well Costs (\$):	2,874,805
Drilling Days:	43	Completion Days:	0
		Workover Days:	0

13-Mar-09

Current Depth (ft): 5,898 **Hole Drilled (ft):** 0 **Ave ROP:**

Current Ops: 00:00 to 06:00 Laid down fishing tools and the fish. Made up drilling assembly and started running in the hole.

Operation Summary:

Ran in the hole with wash over pipe to 5876'. (1 hrs)
Circulate and wash over fish from 5877' to 5891'. Pumped two soap slugs. (2 hrs)
Pulled out of the hole and laid down the wash over pipe. (5 hrs)
Ran in the hole with an 8 1/8" over shot with an 6 1/4" grapple to 5877'. (3 hrs)
Work over shot on to the fish at 5877'. (1 hrs)
Pulled out of the hole. No recovery of the fish. (3 hrs)
Serviced the rig. (0.5 hrs)
Ran in the hole with an 8 1/8" over shot with an 6 3/8" grapple to 5877'. (3.5 hrs)
Circulated and latched on to the fish at 5877'. (1 hrs)
Pulled out of the hole with the fish. Full recovery of the fish. (4 hrs)

Comments: Ran in the hole with wash over pipe to 5876'. Circulate and wash over fish from 5877' to 5891'. Pumped two soap slugs. Pulled out of the hole and laid down the wash over pipe. Ran in the hole with an 8 1/8" over shot with an 6 1/4" grapple to 5877'. Work over shot on to the fish at 5877'. Pulled out of the hole. No recovery of the fish. Serviced the rig. Ran in the hole with an 8 1/8" over shot with an 6 3/8" grapple to 5877'. Circulated and latched on to the fish at 5877'. Pulled out of the hole with the fish. Full recovery of the fish.

Restricted Air on:	4100 #/hr	H2S= 27 ppm, 0.11#/hr.	NH3=210 ppm , 0.8#/hr
Restricted Air off:	4100 #/hr	H2S= 84 ppm, 0.34#/hr.	NH3=210 ppm, 0.8#/hr
Unrestricted	5700# /hr	H2S= 84ppm, 0.48#/hr.	NH3=210 ppm, 1.1#/hr

Mud Data: None

Surveys: None

Well Summary Report		Calpine	
Well ID: Happy Jack 12		Well Name: Happy Jack 12	
Field: Geysers		Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
Daily Costs (\$): 72,680		Well Costs (\$): 2,947,485	
Drilling Days: 44		Completion Days: 0 Workover Days: 0	
14-Mar-09	Current Depth (ft): 6,042	Hole Drilled (ft): 144	Ave ROP: 20.6
<p>Current Ops: 00:00 to 06:00 Drilled to from 6042' to 6153'. The well is making a small amount of water.</p> <p>Operation Summary: Laid down the fishing tools and the entire fish. (2.5 hrs) Made up the drilling assembly and ran in the hole to 5477'. Replaced 24 jts of slick drill pipe. (10 hrs) Reamed tight hole from 5477' to 5517'. (1 hrs) Ran in the hole to 5818'. (0.5 hrs) Reamed from 5818' to 5898'. (2 hrs) Drilled 8 1/2" hole with air from 5898' to 6042'. (7 hrs) Circulated and ran a directional wireline survey at 5972'. (1 hrs)</p> <p>Comments: Laid down the fishing tools and the entire fish. Made up the drilling assembly and ran in the hole to 5477'. Replaced 24 jts of slick drill pipe. Reamed tight hole from 5477' to 5517'. Ran in the hole to 5818'. Reamed from 5818' to 5898'. Drilled 8 1/2" hole with air from 5898' to 6042'. Circulated and ran a directional wireline survey at 5972'. Restricted Air on: 4100 #/hr H2S= 35 ppm, 0.14#/hr. NH3=210 ppm, 0.8#/hr Restricted Air off: 4100 #/hr H2S= 84 ppm, 0.34#/hr. NH3=210 ppm, 0.8#/hr Unrestricted 5700#/ hr H2S= 84ppm, 0.48#/hr. NH3=210 ppm, 1.1#/hr</p> <p>Mud Data: None Surveys: 5972ft - 21.2 deg Inc, 81.6 deg Az;</p>			
Daily Costs (\$): 66,251		Well Costs (\$): 3,013,736	
Drilling Days: 45		Completion Days: 0 Workover Days: 0	
15-Mar-09	Current Depth (ft): 6,348	Hole Drilled (ft): 306	Ave ROP: 15.3
<p>Current Ops: 00:00 to 06:00 Pulled out of the hole for a new bit and tools.</p> <p>Operation Summary: Drilled 8 1/2" hole with air from 6042' to 6195'. (9.5 hrs) Circulated and ran a directional wireline survey at 6136'. Float was stuck open with cutting coming up the drill pipe and the survey tool got stuck and we worked the survey tool free. (3 hrs) Drilled 8 1/2" hole with air from 6195' to 6348'. (10.5 hrs) Circulated and attempted to survey but float was out with cuttings coming up the drill pipe. (1 hrs)</p> <p>Comments: Drilled 8 1/2" hole with air from 6042' to 6195'. Circulated and ran a directional wireline survey at 6136'. Float was stuck open with cutting coming up the drill pipe and the survey tool got stuck and we worked the survey tool free. Drilled 8 1/2" hole with air from 6195' to 6348'. Circulated and attempted to survey but float was out with cuttings coming up the drill pipe.</p> <p>Restricted Air on: 4100 #/hr H2S= 35 ppm, 0.14#/hr. NH3=210 ppm, 0.8#/hr Restricted Air off: 4100 #/hr H2S= 84 ppm, 0.34#/hr. NH3=210 ppm, 0.8#/hr Unrestricted 5700#/ hr H2S= 84ppm, 0.48#/hr. NH3=210 ppm, 1.1#/hr</p> <p>Mud Data: None Surveys: None</p>			
Daily Costs (\$): 46,304		Well Costs (\$): 3,060,040	
Drilling Days: 46		Completion Days: 0 Workover Days: 0	
16-Mar-09	Current Depth (ft): 6,348	Hole Drilled (ft):	Ave ROP:



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Current Ops: Reamed to 6348'. Blew hole cleaned and took directional wireline survey at 6278'. Attempted to drill, to much touque. Laid single back out and rereamed pumping slug, finally got bit to turn on bottom. Drilled 8 1/2" hole with air from 6348' to 6407'.

Operation Summary:

Pulled out of the hole laying down 80 joints of slick drill pipe. Gauged tools and broke off bit #12'. (12 hrs)

Made up bottom stand of bottom hole assembly with new 8 1/2" bit #13 and stood it back in the derrick. (1 hrs)

Slipped and cut the drilling line. (1.5 hrs)

Ran in the hole with the rest of the bottom hole assembly and one stand of drill pipe. (2 hrs)

Shut pipe rams and blooie line valve to shut the well in. Took inspection plate off the muffler and retrieved bottom part of the rotating rubber (rotating rubber broke off while trying to stab rubber when we started in the hole). (1.5 hrs)

Opened well up and continued in the hole picking up 80 joints of replacement drill pipe for slick drill pipe laid down to 2991'. (4 hrs)

Ran drill pipe out of the derrick in the hole to 6286'. (1.5 hrs)

Blew hole and started reaming 8 1/2" hole at 6286'. (0.5 hrs)

Comments: Pulled out of the hole laying down 80 joints of slick drill pipe. Slipped and cut the drilling line. Ran in the hole with the bottom hole assembly. Ran one stand of drill pipe in the hole. Shut pipe rams and blooie line valve to shut the well in. Took inspection plate off the muffler and retrieved bottom part of the rotating rubber (rotating rubber broke off while trying to stab rubber when we started in the hole). Opened well up and continued in the hole picking up 80 joints of replacement drill pipe for slick drill pipe laid down. Continued to run in the hole to 6386'. Started reaming at 6386'.

Restricted Air on: 4100 #/hr H2S= 35 ppm, 0.14#/hr. NH3=210 ppm, 0.8#/hr

Restricted Air off: 4100 #/hr H2S= 84 ppm, 0.34#/hr. NH3=210 ppm, 0.8#/hr

Unrestricted 5700# hr H2S= 84ppm, 0.48#/hr. NH3=210 ppm, 1.1#/hr

Mud Data: None

Surveys: 6134ft - 20.3 deg Inc, 77.5 deg Az;

Daily Costs (\$): 58,640 **Well Costs (\$):** 3,118,680

Drilling Days: 47 **Completion Days:** 0 **Workover Days:** 0

17-Mar-09

Current Depth (ft): 6,449 **Hole Drilled (ft):** 101 **Ave ROP:** 13.5

Current Ops: 0000-0600 Continued to wait on fishing tools. Made up over shot and ran in the hole.

Operation Summary:

Reamed from 6286' to bottom at 6349'. (1.5 hrs)

Blew hole clean pumping slug and took directional wireline survey at 6278'. (1 hrs)

Tried to drill ,hole was tight with high torque. Set one single back to 6308' and reamed bottom of the hole back to bottom at 6349'. (1.5 hrs)

Drilled from 6349' to 6449', stopped making hole. (7.5 hrs)

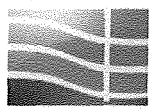
Blew hole clean while doing a wet test. (0.5 hrs)

Pulled out of the hole. Bottom hole assembly twisted off leaving bit, stab and two pony collars in the hole. (5 hrs)

Waited on fishing tools to arrive. (7 hrs)

Comments: Reamed from 6286' to bottom at 6348. Blew hole clean and took wireline directional survey at 6278'. Went to drill hole was tight, to much torque. Singled one joint out and rereamed from 6308' to bottom at 6348'. Drilled 8 1/2" hole with air from 6348' to 6449', bit stopped drilling. Pulled out of the hole. Bottom hole assembly twisted off leaving bit, one stab and two pony collars in the hole, (23.22' long). Waited on fishing tools.

Restricted Air on: 4100 #/hr H2S= 35 ppm, 0.14#/hr. NH3=30 ppm, 12#/hr



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Restricted Air off: 4100 #/hr 12#/hr	H2S= 84 ppm, 0.34#/hr.	NH3=30 ppm,
Unrestricted 5700#/ hr 17#/hr	H2S= 84ppm, 0.48#/hr.	NH3=30 ppm,

Mud Data: None

Surveys: 6278ft - 19.4 deg Inc, 75.3 deg Az;

Daily Costs (\$): 53,481	Well Costs (\$): 3,172,161
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Drilling Days: 48	Completion Days: 0	Workover Days: 0
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18-Mar-09	Current Depth (ft): 6,449	Hole Drilled (ft):	Ave ROP:
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Current Ops: 0000-0600 Drilled 8 1/2" hole with air from 6449' to 6569'.

Operation Summary:

Waited on fishing tools to arrive (2 hrs)
 Made up fishing tools and ran in the hole to the top of the fish at 6425'. (8 hrs)
 Blew hole and worked over fish at 6425'. (1 hrs)
 Pulled out of the hole retrieving all 22.23' of the fish. Laid down the fish. Broke and laid down the fishing tools. (3 hrs)
 Serviced the rig and cleared the rig floor. (1 hrs)
 Made up bit # 14 and new bottom hole assembly. Ran in the hole and tagged up at 4654'. (5 hrs)
 Reamed from 4654' to 4694'. Continued to run in the hole to 4812'. Spot reamed from 4812' to 5250'. Ran in the hole to 6315', Spot and safety reamed to bottom at 6449'. (4 hrs)

Comments: Waited on fishing tools. Made up fishing tools and ran in the hole to the top of the fish at 6425'. Worked over and engaged fish. Pulled out of the hole with 22.23' of fish.. Laid down fish and broke down fishing tools. Made up Bit # 14 and new bottom hole assembly. Ran in the hole and reamed from 4654' to 4694'. Continued to run in the hole to 4812'. Spot reamed from 4812' to 5250'. Ran in the hole to 6315', Spot and safety reamed to bottom at 6449'.

Restricted Air on: 4100 #/hr 12#/hr	H2S= 35 ppm, 0.14#/hr.	NH3=30 ppm ,
Restricted Air off: 4100 #/hr 12#/hr	H2S= 84 ppm, 0.34#/hr.	NH3=30 ppm,
Unrestricted 5700#/ hr 17#/hr	H2S= 84ppm, 0.48#/hr.	NH3=30 ppm,

Mud Data: None

Surveys: None

Daily Costs (\$): 69,758	Well Costs (\$): 3,241,919
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Drilling Days: 49	Completion Days: 0	Workover Days: 0
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19-Mar-09	Current Depth (ft): 6,868	Hole Drilled (ft): 419	Ave ROP: 19.0
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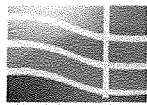
Current Ops: 0000-0600 Blew and cleaned the hole. Pulled out of the hole laying down slick drill pipe. (75 joints laid down at report time)

Operation Summary:

Drilled 8 1/2" hole with air from 6449' to 6629'. (9.5 hrs)
 Blew hole clean and took directional wireline survey at 6584'. (1 hrs)
 Drilled 8 1/2" hole with air from 6684' to 6800'. (8.5 hrs)
 Blew hole clean and took directional wireline survey at 6769'. (1 hrs)
 Drilled 8 1/2" hole with air from 6800' to 6868'. (4 hrs)

Comments: Drilled 8 1/2" hole with air from 6449' to 6868' blowing hole clean and taking directional wireline surveys at 6584' and 6769'.

Restricted Air on: 4100 #/hr	H2S= 35 ppm, 0.14#/hr.	NH3=30 ppm ,
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Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

12#/hr
 Restricted Air off: 4100 #/hr H2S= 84 ppm, 0.34#/hr. NH3=30 ppm,
 12#/hr
 Unrestricted 5700#/ hr H2S= 84ppm, 0.48#/hr. NH3=30 ppm,
 17#/hr

Mud Data: None

Surveys: 6584ft - 19.9 deg Inc, 75.8 deg Az;

Daily Costs (\$):	57,868	Well Costs (\$):	3,299,787
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Drilling Days:	50	Completion Days:	0	Workover Days:	0
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20-Mar-09	Current Depth (ft):	6,868	Hole Drilled (ft):	Ave ROP:	
	Current Ops:	0000-0600 Finished picking up drill collars. Picked up 90 joints of fresh hardbanded drill pipe to replace slick drill pipe laid down.			
	Operation Summary:	<p>Blew hole clean for trip. (3 hrs) Pulled out of the hole laying down 90 joints of slick drill pipe. (6 hrs) Inspected bottom hole assembly laying down two damaged drill collars and 10 slick drill collars. (7 hrs) Pulled, redressed and reinstalled the pipe rams. (3.5 hrs) Three inch wing valve on well head was leaking bad. Broke kill line off and installed good 3" wing valve on leaking one and closed it. Replaced kill line hose. (2 hrs) Centered the blowout preventers. (0.5 hrs) Made up bit #15 and bottom of the bottom hole assembly. (1 hrs) Installed rotating rubber. (0.5 hrs) Started picking up 12 replacement drill collars for drill collars laid down. (0.5 hrs)</p>			
	Comments:	Blew hole clean. Pulled out of the hole laying down 90 joints of slick drill pipe. Inspected bottom hole assembly laying down 2 damaged drill collars and 10 slick drill collars. Pulled ,redressed the pipe rams and reinstalled. Three inch wing valve on well head was leaking bad. Broke kill line off and installed good 3" wing valve on leaking one and closed it. Recentered the blowout preventers. Serviced rig and iron roughneck. Made up bit #15 and new bottom hole assembly and installed rotating rubber. Started picking up drill collars.			
	Mud Data:	None			
	Surveys:	None			
	Daily Costs (\$):	67,310	Well Costs (\$):	3,367,097	
	Drilling Days:	51	Completion Days:	0	Workover Days: 0

21-Mar-09	Current Depth (ft):	7,120	Hole Drilled (ft):	252	Ave ROP:	21.9
	Current Ops:	0000-0600 Took directional wireline survey at 7075'. Drilled 8 1/2" hole from 7120' to 7213'.				
	Operation Summary:	<p>Ran in the hole to 5054' picking up 12 fresh hardbanded deill collars and 90 joints of fresh hardbanded drill pipe to replace tubulars laid down. (8 hrs) Changed out worn rotating rubber for new one. (1 hrs) Continued on in the hole to 6772'. (1.5 hrs) Reamed from 6772' to bottom at 6868'. (1 hrs) Drilled 8 1/2" hole with air from 6868' to 6965' (5 hrs) Blew hole clean and took directional wireline survey at 6920'. (1 hrs) Drilled 8 1/2" hole from 6965' to 7120'. (6.5 hrs)</p>				
	Comments:	Ran in the hole picking up 12 new 6 1/4" drill collars and 90 joints of replacement drill pipe for slick drill pipe laid down. Reamed from 6772' to bottom at 6868'. Drilled 8 1/2" hole with air from 6868' to 7120' running directional wireline survey at 6920'.				



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Restricted Air on:	4100 #/hr	H2S= 35 ppm,	0.14#/hr.	NH3=330 ppm ,
	1.35#/hr			
Restricted Air off:	4100 #/hr	H2S= 46 ppm,	0.18#/hr.	NH3=330 ppm,
	1.35#/hr			
Unrestricted	5700# /hr	H2S= 46ppm,	0.26#/hr.	NH3=330 ppm,
	1.88#/hr			

Mud Data: None

Surveys: 6769ft - 21.9 deg Inc, 69.6 deg Az; 6965ft - 22.5 deg Inc, 72.7 deg Az; 7075ft - 18.9 deg Inc, 74.6 deg Az; 7230ft - 20 deg Inc, 56.6 deg Az;

Daily Costs (\$): 45,688 Well Costs (\$): 3,412,785

Drilling Days: 52 Completion Days: 0 Workover Days: 0

22-Mar-09

Current Depth (ft): 7,292 Hole Drilled (ft): 172 Ave ROP: 18.1

Current Ops: 0000-0600 Ran in the hole picking up 80 joints of replacement drill pipe, continued on in the hole tagging up at 6759'.

Operation Summary:

Blew hole clean and took directional wireline survey at 7075'. (1 hrs)
 Drilled 8 1/2" hole with air from 7120' to 7275'. (8.5 hrs)
 Blew hole clean and took directional wireline survey at 7230'. (1 hrs)
 Continued to drill 8 1/2" hole from 7275' to 7292', started seeing excessive torque. (1 hrs)
 Blew hole clean and did a wet test. (1 hrs)
 Pulled out of the hole with bit #15 laying down 80 joints of slick drill pipe. (9.5 hrs)
 Made up new bit #16 and bottom hole assembly and ran in the hole to 600'. (1.5 hrs)
 Serviced the rig. (0.5 hrs)

Comments: Blew hole clean and took directional wireline survey at 7075'. Drilled 8 1/2" hole with air from 7120' to 7275'. Blew hole clean and took directional wireline survey at 7230'. Continued to drill from 7275' to 7292', started seeing excessive torque. Blew and cleaned the hole. Pulled out of the hole with bit #15 laying down 80 joints of slick drill pipe. Broke and laid down worn tools off the bottom hole assembly. Made up new bit #16 and bottom hole assembly. Started running in the hole to 600'. Serviced the rig.

Restricted Air on:	15,700 #/hr	H2S= 36 ppm,	0.57#/hr.	NH3=320 ppm ,
	5.02#/hr			
Restricted Air off:	15,700 #/hr	H2S= 46 ppm,	0.72#/hr.	NH3=320 ppm,
	5.02#/hr			
Unrestricted	21,800 #/ hr	H2S= 46ppm,	1.00#/hr.	NH3=320 ppm,
	6.98#/hr			

Mud Data: None

Surveys: None

Daily Costs (\$): 64,058 Well Costs (\$): 3,476,843

Drilling Days: 53 Completion Days: 0 Workover Days: 0

23-Mar-09

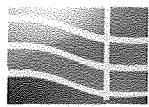
Current Depth (ft): 7,445 Hole Drilled (ft): 153 Ave ROP: 23.5

Current Ops: 00:00 to 06:00 Drilled to 7566'.

Operation Summary:

Ran in the hole to 6759'. Picked up 80 jts of drill pipe to replace slick drill pipe. (6 hrs)
 Reamed tight spot from 6744' to 6760'. (0.5 hrs)
 Ran in the hole to 6930'. (0.5 hrs)
 Spot reamed from 6930' to 7191'. Reamed tight hole from 7191' to 7292'. (9.5 hrs)
 Drilled 8 1/2" hole with air from 7292' to 7431'. (6 hrs)
 Blew hole clean and took directional wireline survey at 7386'. (1 hrs)
 Drilled 8 1/2" hole with air from 7431' to 7445'. (0.5 hrs)

Comments: Ran in the hole to 6759'. Picked up 80 jts of drill pipe to replace slick drill pipe. Reamed tight spot from 6744' to 6760'. Ran in the hole to 6930'. Spot reamed from 6930' to



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

7191'. Reamed tight hole from 7191' to 7292'. Drilled 8 1/2" hole with air from 7292' to 7431'. Blew hole clean and took directional wireline survey at 7386'. Drilled 8 1/2" hole with air from 7431' to 7445'.

Mud Data: None

Surveys: 7386ft - 19.1 deg Inc, 61.7 deg Az; 7541ft - 20.6 deg Inc, 74.5 deg Az;

Daily Costs (\$): 55,234 Well Costs (\$): 3,532,077

Drilling Days: 54 Completion Days: 0 Workover Days: 0

24-Mar-09

Current Depth (ft): 7,622 Hole Drilled (ft): 177 Ave ROP: 19.7

Current Ops: 00:00 to 06:00 Ran in the hole and safety reamed to 7590'.

Operation Summary:

Drilled 8 1/2" hole with air from 7445' to 7586'. (7 hrs)
Blew hole clean and took directional wireline survey at 7541'. (1 hrs)
Drilled 8 1/2" hole with air from 7586' to TD at 7622'. (2 hrs)
Pumped soap slug and circulated clean at 7622'. (1 hrs)
Pulled out of the hole. Laid down the monel collar. (6 hrs)
Unload and strap 7" casing. (1.5 hrs)
Serviced the rig. (0.5 hrs)
Changed the steel rams to 7" casing rams. (1.5 hrs)
Slip and cut the drilling line. (1.5 hrs)
Ran in the hole with an 8 1/2" bit. (2 hrs)

Comments: Drilled 8 1/2" hole with air from 7445' to 7586'. Blew hole clean and took directional wireline survey at 7541'. Drilled 8 1/2" hole with air from 7586' to TD at 7622'. Pumped soap slug and circulated clean at 7622'. Pulled out of the hole. Laid down the monel collar. Unload and strap 7" casing. Serviced the rig. Changed the steel rams to 7" casing rams. Slip and cut the drilling line. Ran in the hole with an 8 1/2" bit.

Mud Data: None

Surveys: None

Daily Costs (\$): 48,408 Well Costs (\$): 3,580,485

Drilling Days: 55 Completion Days: 0 Workover Days: 0

25-Mar-09


Current Depth (ft): 7,622 Hole Drilled (ft): Ave ROP:

Current Ops: 00:00 to 06:00 ran 7" live casing liner.

Operation Summary:

Ran in the hole to 7555' with the 8 1/2" assembly. (5 hrs)
Reamed from 7555' to 7622' with 30' of fill. (2 hrs)
Circulated and pumped soap slugs. Ran a wet test. (1 hrs)
Pulled out of the hole to the shoe at 1725'. (2.5 hrs)
Serviced the rig. (0.5 hrs)
Ran in the hole tagged fill at 7604'. (3 hrs)
Circulated and cleaned out fill from 7604' to 7622' pumped soap slugs. (1.5 hrs)
Pulled out of the hole to run 7" casing liner. (5.5 hrs)
Installed 7" master rubber. (1 hrs)
Rigged up to run casing. (1 hrs)
Held a safety tailboard on running a hot casing liner. (0.5 hrs)
Run 7" live casing liner. (0.5 hrs)

Comments: Ran in the hole to 7555' with the 8 1/2" assembly. Reamed from 7555' to 7622' with 30' of fill. Circulated and pumped soap slugs. Ran a wet test. Pulled out of the hole to the shoe at 1725'. Serviced the rig. Ran in the hole tagged fill at 7604'. Circulated and cleaned out fill from 7604' to 7622' pumped soap slugs. Pulled out of the hole to run 7" casing liner. Installed 7" master rubber. Rigged up to run casing. Held a safety tailboard on running a hot casing liner. Run 7" live casing liner.

 Well Summary Report		Calpine	
		Well ID: Happy Jack 12 Field: Geysers	
		Well Name: Happy Jack 12 Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
Mud Data: None		Surveys: None	
Daily Costs (\$):	52,742	Well Costs (\$):	3,633,227
Drilling Days:	56	Completion Days:	0
		Workover Days:	0
26-Mar-09	Current Depth (ft):	7,622	Hole Drilled (ft):
			Ave ROP:
Current Ops: 00:00 to 06:00 Laid down drill pipe.			
Operation Summary:			
Ran 6083' of 7" hot liner casing. (11 hrs)			
Ran in the hole with the casing on drill pipe and set liner at 7622'. (1.5 hrs)			
Pulled out of the hole with the setting tool. (1.5 hrs)			
Serviced the rig. (0.5 hrs)			
Ran in the hole with an 8 1/2" bit to 1388'. (1.5 hrs)			
Circulated and ran a wet test. (1 hrs)			
Laid down drill pipe. (3 hrs)			
Shut in the well and monitored pressure build up for one hour. Pressure built up to 128 psi. (1.5 hrs)			
Laid down drill pipe working drill pipe out of the derrick. (2.5 hrs)			
Comments: Ran 6083' of 7" hot liner casing. Ran in the hole with the casing on drill pipe and set liner at 7622'. Pulled out of the hole with the setting tool. Serviced the rig. Ran in the hole with an 8 1/2" bit to 1388'. Circulated and ran a wet test. Laid down drill pipe. Shut in the well and monitored pressure build up for one hour. Pressure built up to 128 psi. Laid down drill pipe working drill pipe out of the derrick.			
Mud Data: None		Surveys: None	
Daily Costs (\$):	868,820	Well Costs (\$):	4,502,047
Drilling Days:	57	Completion Days:	0
		Workover Days:	0
27-Mar-09	Current Depth (ft):	7,622	Hole Drilled (ft):
			Ave ROP:
Current Ops: 00:00 to 06:00 Changed out the master valve and installed the casing hanger spool.			
Operation Summary:			
Laid down drill pipe working drill pipe out of the derrick. (8 hrs)			
Serviced the rig. (0.5 hrs)			
Brought on water and killed the well. (2.5 hrs)			
Ran in the hole and tagged the top of the receptical at 1548'. (0.5 hrs)			
Pulled out of the hole measuring out of the hole. (1.5 hrs)			
Laid down drill pipe working drill pipe out of the derrick and drill collars. Broke the connections on the kelly. (6 hrs)			
Nipple down the BOP and the Blooie line to set in the casing hanger spool. (5 hrs)			
Comments: Laid down drill pipe working drill pipe out of the derrick. Serviced the rig. Brought on water and killed the well. Ran in the hole and tagged the top of the receptical at 1548'. Pulled out of the hole measuring out of the hole. Laid down drill pipe working drill pipe out of the derrick and drill collars. Broke the connections on the kelly. Nipple down the BOP and the Blooie line to set in the casing hanger spool.			
Mud Data: None		Surveys: None	
Daily Costs (\$):	43,630	Well Costs (\$):	4,545,677
Drilling Days:	58	Completion Days:	0
		Workover Days:	0
28-Mar-09	Current Depth (ft):	7,622	Hole Drilled (ft):
			Ave ROP:
Current Ops: 00:00 to 06:00 Nipped down the blooie line, all the air equipment and the circulating system.			
Operation Summary:			



Well Summary Report

Calpine

Well ID: Happy Jack 12

Well Name: Happy Jack 12

Field: Geysers

Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA

Changed out the master valve and installed the casing hanger spool and nipped up the BOP. (5 hrs)
 Ran 7" casing stab in to 1563' and landed the casing in the hanger spool stabbing into the receptacle 15'. Rigged down casing equipment. (5 hrs)
 Nipped down the BOP equipment. (14 hrs)

Comments: Changed out the master valve and installed the casing hanger spool and nipped up the BOP. Ran 7" casing stab in to 1563' and landed the casing in the hanger spool stabbing into the receptacle 15'. Rigged down casing equipment. Nipped down the BOP equipment.

Mud Data: None

Surveys: None

Daily Costs (\$): 304,952 **Well Costs (\$):** 4,850,629

Drilling Days: 59 **Completion Days:** 0 **Workover Days:** 0

29-Mar-09

Current Depth (ft): 7,622 **Hole Drilled (ft):** **Ave ROP:**

Current Ops: 00:00 to 06:00 Rig was idle waiting on daylight to rig down.

Operation Summary:

Nipped down the blooie line, all the air equipment and the circulating system. (7 hrs)
 Nipple down the blooie line and load out all the solids equipment and circulating pumps. Clean the mud tanks. Rig released at 19:00 hrs. (12 hrs)
 Rig was idle waiting on daylight to rig down. (5 hrs)

Comments: Nipped down the blooie line, all the air equipment and the circulating system. Nipple down the blooie line and load out all the solids equipment and circulating pumps. Clean the mud tanks. Rig released at 19:00 hrs. Rig was idle waiting on daylight to rig down.

Mud Data: None

Surveys: None

Daily Costs (\$): 113,549 **Well Costs (\$):** 4,964,178

Drilling Days: 60 **Completion Days:** 0 **Workover Days:** 0

30-Mar-09

Current Depth (ft): 7,622 **Hole Drilled (ft):** **Ave ROP:**

Current Ops: 0000-0700 Rig idle, waiting on daylight.

Operation Summary:

Rig Idle, waiting on daylight. (7 hrs)
 Rigged down. Made derrick ready to lay over. Laid derrick over and unstrung the blocks. (9 hrs)
 Rig idle, waited on daylight. (8 hrs)

Comments: Made derrick ready to lay over. Laid derrick over. Continued to rig down. Unstrung the blocks. Rig idle, waiting on daylight.

Mud Data: None

Surveys: None

Daily Costs (\$): 10,432 **Well Costs (\$):** 4,974,610

Drilling Days: 61 **Completion Days:** 0 **Workover Days:** 0

31-Mar-09

Current Depth (ft): 7,622 **Hole Drilled (ft):** **Ave ROP:**

Current Ops: 0000-0700 Rig idle, waiting on daylight.

Operation Summary:


Rig idle, waiting on daylight. (7 hrs)
Comments: Lugged down down motors. Dressed out derrick for the road. Continued to rig down.

Mud Data: None

Surveys: None

Daily Costs (\$): 109,640 **Well Costs (\$):** 5,084,250

Drilling Days: 62 **Completion Days:** 0 **Workover Days:** 0

 Well Summary Report		Calpine	
		Well ID: Happy Jack 12 Field: Geysers	
		Well Name: Happy Jack 12 Sect: 28 Town: 11N Rng: 9W County: Sonoma State: CA	
01-Apr-09	Current Depth (ft): 7,622 Current Ops: 0000-0700 Rig idle waiting on daylight Operation Summary: Rig idle waited on daylight. (7 hrs) Loaded out rig from Happy Jack 12 to go to Backersfield. (8 hrs) Rig idle waiting one daylight. (7 hrs) Comments: Loaded out every thing but the drawworks, derrick and subbases. Mud Data: None Surveys: None	Hole Drilled (ft): Ave ROP:	
	Daily Costs (\$): 237,807 Drilling Days: 63	Well Costs (\$): 5,322,057 Completion Days: 0	Workover Days: 0
02-Apr-09	Current Depth (ft): 7,622 Current Ops: 0000-0600 Rig gone,waiting on daylights. Operation Summary: Waited on daylights (7 hrs) Loaded out drawworks. Broke down and loaded out derrick and subbases. (10 hrs) Waited on daylight. (7 hrs) Comments: Loaded out drawworks. Broke down and loaded out derrick and subbases. Mud Data: None Surveys: None	Hole Drilled (ft): Ave ROP:	
	Daily Costs (\$): 4,640 Drilling Days: 64	Well Costs (\$): 5,326,697 Completion Days: 0	Workover Days: 0
03-Apr-09	Current Depth (ft): 7,622 Current Ops: Last report Operation Summary: Waited on daylights. (7 hrs) Finished loading out Kenai rig 3 off Happy Jack. (8 hrs) Started cleaning up location. (4 hrs) Comments: Finished loading out Kenai rig 3 on Happy Jack. Rigged down cranes. Started clean up on the well site. <div style="text-align: right;">Last Report</div> Mud Data: None Surveys: None	Hole Drilled (ft): Ave ROP:	
	Daily Costs (\$): 39,916 Drilling Days: 65	Well Costs (\$): 5,366,613 Completion Days: 0	Workover Days: 0
04-Apr-09	Current Depth (ft): 7,622 Current Ops: Costs Update Operation Summary: Comments: Mud Data: None Surveys: None	Hole Drilled (ft): Ave ROP:	
	Daily Costs (\$): -2,046 Drilling Days: 66	Well Costs (\$): 5,364,567 Completion Days: 0	Workover Days: 0