Management Summary Report

Geothermal Resource Group

Well ID: AK-3

Well Name: AK-3

Field: Hot Springs Bay Va

Sect: 5 Town: 112W Rng: S005 County: Aleutians East State: AK

Rpt. No.	Date	MD (ft)	TVD (ft)	Management Summary
1	12-Aug-16	0	0	Stage personnel at container location to pull and sort loads. Fly city representative to location, stake hole. Fly materials and personnel to Valley to begin construction of camp.
2	13-Aug-16	0	0	Shut down due to weather, No flying today.
3	14-Aug-16	0	0	Cellar complete, rig skid and substructure set, pits 50% complete.
4	15-Aug-16	0	0	Rig is assembled, support equipment is 80% placed, camp is 75% complete
5	16-Aug-16	0	0	Site 85% complete for operation, inter-net connection still not functioning, all fuel tanks on location have been filled,
6	17-Aug-16	0	0	Completed move and rig up, ready to spud. Completed moving all required drilling supplies to site. Moved in and rigged up third generator. Moved crews into camp.
7	18-Aug-16	49	49	Wait on weather to fly Mayor and Priest to site to bless the hole prior to spud, spud hole at 12:00hrs, core to 49' , trip out install 10 3/4" hole opener, ream to 42' condition hole, trip out for plugged bit, continue to condition hole prior to install 8 5/8" surface casing
8	19-Aug-16	49	49	Reamed PQ hole to 10 3/4" to 42' from BGS, ran 8 5/8" A53 grade B casing from surface to 40', cemented in place with 12 sks of portland cement mixed with 96 gallons of water. Wait on cement for 12 hrs, perform top job (3') , trip in hole with new #8 PQ core bit, Tag cement at 28', core out cement to casing shoe (40') core out rubble to 49'
9	20-Aug-16	176	176	Core ahead , take steam kick at 150' cool hole with cold fresh water. continue coring ahead at 165' stuck pipe, work pipe free, cool hole to 130 Degrees F, Rig up packoff to seal 8" conductor on HWT core rod, Pump cold water to well bore.
10	21-Aug-16	176	176	Made up and ran inside grapple fishing tool, brought fish to surface, cooled hole to laydown fish, packed off 8" with pack off assembly, gained control of well,
11	22-Aug-16	176	176	Controlled hole by pumping cold water into well bore through pack off, devised plan to cement loss zones with 10 sack cement drift plug from 88' to 176', mix and pump cement plug, wait on cement to set, before checking top of cement.
12	23-Aug-16	176	176	Circulated hole to cool discharge at 85F,ran in hole tag top of cement at 172', pull to 168', mix 9 sack cement place balance plug in hole, wait on cement for 6 hrs, pull and laydown core barrel, pick up 7.5' hole opener, hole static no flow, open hole from 40' to 90', continue to wait on cement to set for 12 hrs. ream ahead with hole opener to 125' at 00:00 hrs.
13	24-Aug-16	220	220	Opened PQ hole to 7.5' and cleaned out cement stringers to 170' with well flow controlled. Cleaned out cement to 176' with hole opener. Drilled ahead with 7.5" hole opener with well flow controlled from 176' to 225'. Circulated hole with cool water and 9.2-9.5 salted water. Tripped out lay down hole opener, picked up and ran in hole 5.5" casing set at 220' below ground surface. Cement in place with 62 sacks cement with good returns to surface. Kept annulus full with Portland cement.
14	25-Aug-16	220	220	Cement stopped falling, annulus full. Wait on cement to cure after primary cementing of 5.5" casing. Cut and laid down 8" riser. Waited for fog to lift. Obtained material and installed poor boy pack off on 8-5/8" by 5-1/2" annulus. Installed WHE. Modified BOPE to fit under rig floor and nippled up.
15	26-Aug-16	265	265	Completed nipple up of BOP. Performed low (200 psi) and high (750 psi) BOPE test, 5 min each, OK. Cored out cement shoe. Cored PQ to 225'. performed LOT test (1 psi/ft). Cored PQ from 225' to 265'.
16	27-Aug-16	465	465	Continued coring ahead and ran survey at 300': 0.25 inc, MRT 228 F. Continued coring ahead and ran survey at 400': 0.25 inc, MRT 238 F. Continued coring ahead to 465'. Partial returns from 270' (3-7 GPM).
17	28-Aug-16	770	465	Continued coring ahead with PQ. Recovery 100 % to 770'. Took down hole survey at 500', 600', 700'.
18	29-Aug-16	805	805	Cored ahead from 770 to 805' (TD for 4.5" casing). Circulate and condition hole prior to running casing. Run 800' of 4.5" K55 casing to 800' below ground surface. Cement casing in place with 28 sacks of Thermolite HT cement. Full returns but no cement returns to surface. Shut-in and flush annulus. WOC for initial set. Perform cement top squeeze job. Shut in and start WOC.
19	30-Aug-16	805	805	Wait on cement to set for primary and secondary cement operations. Change out BOP annular element from PQ to HQ. Retest BOP. OK. Drill out cement to 4.5" casing shoe at 800'.
20	31-Aug-16	1,105	1,105	Cleaned out cement shoe track and float shoe, core 5' of new hole to 810', Conduct LOT test. continue core ahead HQ to 1105' at 00:00 hrs.
21	01-Sep-16	1,385	1,385	Continued coring ahead HQ to 1300'. Bit walking and pressured up. Run single shot survey at 1300'. 1 degree inclination. Pull HQ#6 bit out of hole and replace with new HQ 8 AM. Circulate hole to cool as tripping in. Core ahead from 1300' to 1385'.
22	02-Sep-16	1,645	1,645	Core ahead HQ from 1385' to 1645'. Survey at 1500' with Totco: 1.75 degree inclination.

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23	03-Sep-16	1,865	1,865	Core ahead to 1725' with HQ core with full returns (survey at 1700': 1 degree inclination). Wait on weather to deliver additional core rod from village and staging area. Core ahead to 1865' with full returns.
24	04-Sep-16	1,955	1,955	Core ahead HQ from1865' to 1919'. Tripped out for bit. Ran in hole with new HQ bit (#8). Cored to 1955' (TD). Circulated hole. Tripped out to run PT survey log.
25	05-Sep-16	1,955	1,955	Complete the pressure / temperature survey. Pick up and install completion liner with 950' of perforated HQ and 250' of blank HQ. Release rig at 15:30 hrs. Break rig down and fly to staging area. Evening crew on at 12:00 to help with tear down. Crews suspend work at 19:30 hrs.
26	06-Sep-16	1,955	1,955	Conducted P T survey, removed all drilling equipment from the site, installed the well head discharge equipment, cleaned site prepare for demob of project.
27	07-Sep-16	1,955	1,955	Conducted P/T survey to 1955', continued tear down of camp, operations tent and core tent, completed drain line from cellar to discharge point. fenced mud sump and retention pond with barbed wire. Major crews loaded containers with equipment, FINAL REPORT