

O'BRIEN RESOURCES CORPORATION

154 HUGHES ROAD • SUITE 4
GRASS VALLEY, CALIFORNIA 95945
(916) 272-7203

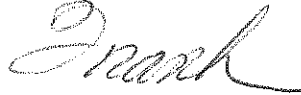
June 12, 1981

Mr. Dean Pilkington
AMAX Exploration, Inc.
Geothermal Branch
7100 West 44th Ave.
Wheat Ridge, CO 80033

Dear Mr. Pilkington:

Enclosed are the logs of Alum: numbers 1,2,
3,4, and Fish Lake number 3 (blowout).

Yours truly,



Frank Dellechaie

FD:bf

Lithology Log Alum #1

- 0-30 Buff sandy claystone (tuffaceous)
30-60 Greenish buff claystone with cherty layers 2-5mm
60-90 Greenish buff sandy siltstone, poorly sorted with cherty layers 1-2mm.
90-110 Coarse grained 1-3mm pebbly lithic quartz- ss with reddish gray chert clasts subrounded quartz subrounded
110-135 Buff siltstone as in 60-90
135-155 as in 90-110
155-160 as in 60-90

Alum Prospect Gradient Drilling Log Hole #1 Jan. 16, 1981

1350	1400	set up
1400	1420	25 dry 25
1420	1440	15 " 40
1440	1500	20 " 60
1500	1520	20 " 80
1520	1535	20 " 100
1535	1545	20 " 120
1545	1600	20 " 140
1600	1610	20 " 160
1610	1645	Complete hole, reclaim, cement

Lithology Log Alum #2

- 0-70 Tuffaceous ss medium grained with abundant subrounded quartz grains high clay content, moist, light tan
70-90 Light green-gray claystone, soft sectile - slightly moist, compacts to dense lumps
90-130 Light gray claystone, moist, compacts to dense lumps
130-170 Gray sandy siltstone with dark gray lithic and quartz grains

Alum Prospect Gradient Drilling Log Hole #2 Jan 16, 1981

1015		set up
1030	1050	25 dry 25
1050	1110	15 " 40
1110	1135	20 " 60 Moist clay slows
1135	1215	20 " 80 Progress
1215	1245	20 " 100 H ₂ O + soap - 2 bottles soap
1245	1399	20 " 120
1300	1319	20 " 140
1310	1325	20 " 160
1325	1350	Mobilization to Alum #1, cement and reclaim hole

Lithology Log Alum #3

0-40 White to very light buff siltstone
40-70 Very light gray siliceous siltstone fragments, hard, angular 2-7mm, much less clay than 0-40
70-105 Siliceous siltstone as in 40-70 but with FeOx orange-red staining - apparently from oxidation of individual grains
105-160 Medium gray siltstone - non siliceous, abundant clay
160 Pyrite crystals 1-3mm
175 Medium gray siliceous siltstone with pyrite crystals 1-5mm. more abundant than at 160'.

Alum Prospect Gradient Hole #3 Drill Log Jan. 16, 1981

0700 0720 set up
0720 0815 10 tricore H₂O 10' set 6" casing to 10'
0815 0830 25 dry 25
0830 0850 15 " 40
0850 0910 20 " 60 cuttings 23° C @ 70 feet (21m')
0910 0925 20 " 80
0925 0935 20 " 100
0935 0955 20 " 120
0955 1010 20 " 140
1010 1020 20 " 160 cuttings 30° C @ 150' (45m')
1020 1030 20 " 180
1030 1045 20 " 200 cuttings 36° C at 200' (60m')
1045 1100 20 " 220
1100 1110 20 " 240
1110 1120 20 " 260
1120 1130 20 " 280
1130 1140 20 " 300
1140 1150 20 " 320
1150 1200 10 " 330
1200 1330 Complete hole, mobilize

Lithology Log Alum #4

0-90 Very light gray argillite non calc.- fragment 2-5mm subangular - laminated 2-5mm
90-160 Medium green gray siltstone (argillite?) interbedded with dark green gray medium grained gray wacke with quartz, gray lithic fragments and green glauconite? cement - non calc., quartz veining

Alum Prospect Gradient Drilling Log Hole #4 Jan 16, 1981

0700 0730 set up
0730 0745 25 dry 25
0745 0810 15 " 40
0810 0835 20 " 60
0835 0845 20 " 80
0845 0900 20 " 100
0900 0907 20 " 120 cuttings warm ~ 20° C

Alum Prospect Gradient Drilling Log Hole #4 Jan. 16, 1981
(continued)

0907 0930 20 dry 140
0930 0945 20 " 160
0945 1000 Place 3/4 PVC gradient pipe and 1/2 piezometer
1000 1015 mobilize to Alum #2 - cemented and reclaimed hole

Lithology Log - Fish Lake #3

0-45 Lithic tuff with abundant quartz clasts, angular
5-12mm.- abundant pumice altered and bleached

45-50 Orange staining in same rock type as 0-45, may
indicate cinnabar horizon

50-105 Very intense argillization and bleaching, occasional
crystals, native S, H₂S odor

BHT @ 35.5m' 75.25°C after 1 hour equilibration

Fish Lake Prospect Gradient Hole #3 Drill Log Jan. 18, 1981

0700 0730 25 dry 25
0730 0800 15 " 40
0800 0830 20 " 60
0830 0850 20 " 80
0850 0905 20 " 100 40°C cuttings @ 100 - steaming @ air temp. of 2°C
0905 0915 15 " 115

Hole terminated c 80°C steam, under low positive pressure and
increasing moisture indicates nearing water table - H₂S very strong