

LITHOLOGIC LOG

AN-A-5
 AN-A-5R

Completion Dates:
 8/21/78 (GL to 300)-
 9/15/78 (300 to TD)

Depth
 Interval,
 Feet

GL-10	100% CLAY.
10-20	50% GRAVEL, sandy, 2 to 12 mm. sized angular to rounded clasts of basalt and rhyolite. 30% CLAY. 20% SAND, volcanic.
20-40	80% CLAY, gritty. 20% SAND and GRAVEL, as above. Clasts appear more rounded in interval 30 to 40 feet.
40-50	70% GRAVEL, up to 2 cm. sized well-rounded clasts of basalt. 30% CLAY, gritty, gray.
50-60	70% GRAVEL, as above, with clasts of vesicular basalt. 30% CLAY, as above.
60-70	60% GRAVEL, as above, basalt is not vesicular. 40% CLAY, as above.
70-80	50% GRAVEL, as above. 50% CLAY, as above.
80-90	50% SAND and GRAVEL, up to 2-1/2 cm. sized angular to sub-rounded volcanic clasts. 50% CLAY.
90-100	80% CLAY. 20% GRAVEL, as above.
100-110	85% CLAY. 15% GRAVEL, up to 7 mm. sized angular to rounded volcanic clasts.
110-120	75% CLAY. 25% GRAVEL, as above.
120-130	50% CLAY. 50% GRAVEL, as above, but up to 12 mm in size.

AN-A-5, AN-A-5R, Continued

130-150	70% GRAVEL, as above. 30% CLAY.
150-160	60% CLAY, gritty. 40% GRAVEL, as above.
160-170	60% GRAVEL, as above. 40% CLAY.
170-180	50% BASALT, dark, aphanitic, massive, vesicular. 30% CLAY. 20% GRAVEL, as above.
180-190	100% BASALT, as above.
190-250	100% BASALT, as above, except red in color and with some zeolitic(?) mineralization.
250-260	50% BASALT, as above, with addition of red vesicular component. 50% SAND, dark, fine-grained, rounded volcanic clasts.
260-270	70% SAND, as above. 30% BASALT, gray to red, possibly detrital.
270-280	50% SAND, fine, and CLAY, gritty. 50% GRAVEL, up to 9 mm. sized angular to sub-rounded volcanic clasts.
280-300	100% BASALT, dark-gray to red.
300-310	100% BASALT, vesicular, with 5% silica replacement.
310-320	95% BASALT, red, vesicular, with secondary silica. 5% GRAVEL, basaltic.
320-330	100% BASALT, red and black, fractured, massive, with secondary silica.
330-340	100% BASALT, black to gray, massive, with secondary silica.
340-360	80% BASALT, black, gray and red, with some secondary silica. 20% VOLCANIC ROCK, light-colored, black and red.
360-370	90% BASALT, as above. 10% VOLCANIC ROCK, as above.
370-380	100% BASALT, red, massive, vesicular, with soft buff-colored secondary mineral replacement.

AN-A-5, AN-A-5R, Continued

380-410	100% BASALT, red and black, with some secondary silica replacement.
410-430	90% SANDSTONE, reddish-brown, fine-grained, well-cemented. 10% BASALT, black.
430-440	No sample, but bit was coated with clay.
440-450	80% CLAY, brown. 20% BASALT, black.
450-460	70% SAND and GRAVEL, composed of black and red basalt. 30% CLAY, brown, soft.
460-470	70% SAND and GRAVEL, as above. 30% CLAY, brown, firm.
470-480	70% CLAY, brown, firm. 30% SAND and GRAVEL, composed of black and red basalt.
480-490	90% CLAY, brown, firm. 10% SAND and GRAVEL, basaltic, as above.
490-520	100% CLAY, brown, of which top 20 feet is firm.
520-540	90% CLAY, brown, soft to firm. 10% SAND and GRAVEL, composed of black basalt. <u>Conductivity sample taken at interval 520-530.</u>
540-620	100% CLAY, brown, firm.
620-630	70% CLAY, brown, firm. 30% MUDSTONE, dark-brown, moderately well-cemented.
630-640	60% CLAY, brown, firm. 40% SAND and GRAVEL, basaltic, and MUDSTONE, as above.
640-660	40% MUDSTONE, dark-brown, as above. 30% CLAY, as above. 30% SAND and GRAVEL, basaltic, as above.
660-670	100% CLAY and MUDSTONE. Minor black detrital basalt. <u>Conductivity sample taken.</u>
670-700	100% BASALT, black, massive. Minor brown firm clay.
700-740	100% BASALT, black, massive, with some green secondary minerals. Minor brown firm clay.

AN-A-5, AN-A-5R, Continued

740-780	100% BASALT, black (80%) and red (10%), partly vesicular, with 10% green very fine-grained soft secondary mineral replacement. <u>Conductivity sample taken at interval 760-770.</u>
780-820	90% BASALT, black, with some secondary mineral replacement. 10% CLAY, brown, firm. Trace gray mudstone.
820-880	90% BASALT, as above, with minor amount of quartz between 820 and 860. 10% CLAY, as above. <u>Conductivity sample taken at interval 820-820.</u>
880-890	90% BASALT, as above, with some red basalt. 10% CLAY, as above.
890-900	50% SAND and GRAVEL, composed of red and black basalt. 50% CLAY, brown, firm and MUDSTONE, gray.
900-910	50% BASALT, black. 50% FINE-GRAINED ROCK, gray to brown, with hardness greater than 5, containing small particles of quartz. Minor clay and mudstone.
910-920	50% BASALT, black. 50% CLAY, brown, firm, with some quartz.
920-940	70% BASALT, black. 30% CLAY, brown, firm and MUDSTONE, gray. <u>Conductivity sample taken at interval 920-930.</u>
940-960	90% BASALT, black. 10% CLAY, brown, firm and MUDSTONE, gray. Minor white quartz.
960-980	No samples.
980-990	95% BASALT, black, massive(?). 5% CLAY, brown, firm and MUDSTONE, gray. Minor quartz and unidentified yellow rock.
990-1000	No sample.
1000-1010	95% BASALT, black, massive(?). 5% CLAY, brown, firm. Minor quartz.
1010-1020	70% BASALT, black. 30% CLAY, brown, firm. Minor quartz.

AN-A-5, AN-A-5R, Continued

- 1020-1090 95% BASALT, black, massive(?).
5% CLAY, brown, firm and MUDSTONE.
Minor quartz.
Conductivity sample taken at interval 1040-1050.
- 1090-1100 No sample.
- 1100-1110 100% BASALT, black and red, fractured, with green
secondary minerals, minor quartz.
- 1110-1160 95% BASALT, black to dark-gray, aphanitic. Minor
quartz, green secondary minerals, and chalcedony.
5% CLAYSTONE, brown, soft, and minor brown firm clay.
Conductivity sample taken at interval 1120-1130.
- 1160-1180 70% BASALT, dark-gray, aphanitic.
30% VOLCANIC ROCK, reddish-brown, slightly vesicular
with partial filling of vesicles with white and
green minerals.
Minor green chalcedony.
- 1180-1220 90% BASALT, dark-gray, aphanitic, with occasional blue
coating.
10% VOLCANIC ROCK, red, with some secondary quartz.
Minor free chalcedony.
- 1220-1260 95% BASALT, dark-gray, aphanitic.
5% CLAYSTONE, brown, hard.
Minor blue-gray rock with conchoidal fracture, green
chalcedony and red volcanic rock.
Conductivity sample taken at interval 1240-1250.
- 1260-1270 60% BASALT, dark-gray, aphanitic.
40% CLAYSTONE, light-brown.
- 1270-1280 100% BASALT, dark-gray to dark-brown, aphanitic.
- 1280-1290 50% BASALT, greenish-gray, aphanitic.
50% VOLCANIC ROCK, reddish-brown, with occasional dark-
gray inclusions.
- 1290-1300 90% BASALT, greenish-gray to dark-gray.
10% CLAYSTONE, light-brown.
- 1300-1310 100% BASALT, greenish-gray, aphanitic.
- 1310-1330 60% BASALT, gray to dark-gray.
35% VOLCANIC ROCK, reddish-brown, hard, aphanitic, with
occasional quartz-filled vesicles.
5% light-blue to colorless chalcedony.
Conductivity sample taken at interval 1320-1330.

AN-A-5, AN-A-5R, Continued

- 1330-1340 75% VOLCANIC ROCK, reddish-brown to pink, vesicular.
25% BASALT, greenish-gray.
Minor chalcedony.
- 1340-1350 90% VOLCANIC ROCK, as above, with occasional inclusions
of dark-gray basalt and white quartz.
10% BASALT, as above.
- 1350-1370 60% VOLCANIC ROCK, reddish-brown.
40% BASALT, dark-gray.
Minor light-brown claystone.
- 1370-1380 Most of sample consisted of lost-circulation material.
Rock material consisted of dark-gray aphanitic basalt
and a hard green aphanitic volcanic rock.
- 1380-1390 75% VOLCANIC ROCK, green, aphanitic, with olivine(?).
25% BASALT, dark-gray, aphanitic, with abundant blue
chalcedony.
- 1390-1400 100% VOLCANIC ROCK, green to greenish-gray, hard,
aphanitic, with minor light-blue chalcedony and
olivine(?).
- 1400-1430 70% BASALT, greenish-gray, aphanitic.
30% VOLCANIC ROCK, reddish-brown.
- 1430-1450 100% BASALT, greenish-brown to greenish gray, hard,
aphanitic.
Minor quartz.
- 1450-1470 50% BASALT, greenish-gray, aphanitic.
50% VOLCANIC ROCK, reddish-brown, with occasional dark-
gray inclusions.
Conductivity sample taken at interval 1460-1470.
- 1470-1480 75% BASALT, greenish-gray to dark-gray.
25% VOLCANIC ROCK, reddish-brown.
- 1480-1490 75% VOLCANIC ROCK, reddish-brown, vesicular, with
vesicles partly filled with dark greenish-gray
mineral and occasional clear colorless quartz.
25% BASALT, dark greenish, gray, fine to medium-grained.
- 1490-1530 100% BASALT, dark-brown to dark-gray, aphanitic, with
some clear colorless quartz.
Conductivity sample taken at interval 1520-1530.
- 1530-1580 100% BASALT, dark-gray to dark-greenish gray, with
occasional vesicles.
Minor light-blue chalcedony.

AN-A-5, AN-A-5R, Continued

1580-1600	60% VOLCANIC ROCK, reddish-brown, finely porous. 35% BASALT, brown to dark-gray. 5% CLAYSTONE, light-brown, soft.
1600-1640	95% BASALT, dark-brown to dark-gray, aphanitic. 5% VOLCANIC ROCK, reddish-brown. Minor light-brown claystone.
1640-1660	60% VOLCANIC ROCK, reddish-brown to brown, slightly vesicular. 35% BASALT, dark-gray. 5% CLAYSTONE, light-brown. <u>Conductivity sample taken at interval 1640-1650.</u>
1660-1670	75% BASALT, dark-gray to dark-brown. 25% VOLCANIC ROCK, reddish-brown. Minor light-brown claystone.
1670-1680	90% BASALT, dark-gray, aphanitic. 10% VOLCANIC ROCK, red.
1680-1690	65% BASALT, dark-gray to greenish-gray. 35% VOLCANIC ROCK, reddish-brown. Both rock types contain light-blue veinlets of chalcedony. Minor free calcite.
1690-1710	90% BASALT, dark-gray and dark-greenish-gray. 5% VOLCANIC ROCK, red. 5% CLAYSTONE, light-brown.
1710-1720	80% BASALT, greenish-gray. 20% VOLCANIC ROCK, reddish-brown.
1720-1750	90% BASALT, green to dark-gray. 5% VOLCANIC ROCK, red. 5% CLAYSTONE, light-brown.
1750-1755 TD	80% BASALT, dark-greenish-gray. 20% CLAYSTONE, light-brown, soft. Minor light-blue chalcedony.