

Microscopic Study of Drill Samples

Samples

1000'-1021'	Mostly fine gravel and sand. Gravel pebbles are angular semi-rounded and rounded.
	Mineral and rock composition: basalt quartzite, pumice, lava. High percent of rounded pebbles of milky quartz and transparent colorless quartz.
1020'-1030'	Identical to 1000'-1020'.
1030'-1040'	" " "
1040'-1050'	" " "
1050'-1060'	Low percent fine gravel. Coarse fragments of basalt, quartzite, quartz, plagioclase feldspar.
1060'-1080'	Similar to 1050'-1060'. High percent small pebbles of quartz.
1106'-1120'	<u>Predominantly fresh basalt.</u>
1200'-1210'	A heterogeneous mixture: basalt, andesite. High percent quartz (crystalline quartz, milky quartz, chalcedony) calcareous basalt.
1260'-1270'	Identical to 1200'-1210'.
1270'-1280'	" " "
1280'-1290'	Black basalt, a high percent deep red basalt, a high percent of quartz. Fragments of white kaolinized material, probably kaolinized basalt. Alteration of basalt due to hydrothermal action.
1300'-1320'	High percent of fine grained material, yellowish gray to light brown. This is basalt in early stages of disintegration.
1320'-1330'	Quite similar to 1300'-1320'. Some of the basalt contains an appreciable percent of glass. Zoolite occurs in small cavities of basalt fragments. The cavities of an appreciable percent of basalt fragments contains crystalline quartz, some are filled with chalcedony and some cavities are filled with calcite. Some white, partially kaolinized basalt fragments contain smooth pea shaped bodies.
1340'-1350'	High percent of deep reddish brown amygdaloidal basalt. Some secondary crystalline quartz. Some partially kaolinized fragments of basalt.

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1360'-1370'	Deep reddish brown amygdaloidal basalt. Dark gray basalt. Some oligoclase feldspar. Some greenstone; this is produced from a slight hydrothermal effect on basalt. Some recrystallized calcite. Some basalt partially kaolinized.
1370'-1380'	Very similar to sample 1360'-1370'.
1380'-1390'	Identical to 1370'-1380'.
1390'-1400'	" " "
1405'-1415'	Low percent deep reddish brown amygdaloidal basalt. High percent dark gray basalt. Some kaolinization of basalt. Low percent of quartz. Some calcareous basalt. Crystals of calcite in amygdaloidal cavities of basalt.
1415'-1425'	Very similar to sample 1405'-1415'.
1425'-1435'	High percent deep reddish brown amygdaloidal basalt. Some dark green fragments from slight hydrothermal alteration of basalt. Some calcareous basalt.
1435'-1445'	Identical to sample 1425'-1435'.
1445'-1455'	Low percent deep reddish brown amygdaloidal basalt. Appreciable percent calcareous basalt. Calcite.
1455'-1465'	Identical to 1445'-1455'.
1465'-1470'	" " "
1470'-1480'	" " "
1480'-1490'	Very similar to sample 1445'-1455'.
1490'-1500'	Identical to sample 1480'-1490'.
1500'-1510'	Similar to sample 1480'-1490', including some dark green fragments - alteration of basalt.
1510'-1530'	Deep reddish brown amygdaloidal basalt appears again. Sample contains an appreciable percent of calcareous basalt. Some calcite, some quartz. Some kaolinization of basalt.
1530'-1540'	Similar to 1510'-1530'.
1540'-1560'	Most of the material is basalt. Considerable of it is somewhat disintegrated. Calcite occurs in amygdaloidal cavities of many basalt fragments. Also some loose calcite fragments.
1580'-1605'	Similar to 1540'-1560'.
1605'-1620'	Similar to 1580'-1605'. Powdered material includes magnetite.
1620'-1630'	Most of the material is dark gray and black basalt. Many narrow *3*
	veinlets of quartz and chalcedony in basalt fragments. Considerable loose fragments of secondary quartz. Basalt fragments contain magnetite. Some kaolinization.
1630'-1640'	Identical to 1620'-1630'.
1640'-1650'	" " "
1670'-1680'	" " "
1690'-1700'	" " "
1700'-1710'	" " "
1710'-1720'	" " "
1720'-1730'	Identical to 1620'-1630'.
1730'-1740'	" " "
1740'-1750'	" " "
1760'-1770'	" " "
1770'-1780'	" " "
1800'-1810'	" " "
1820'-1830'	" " "
1830'-1840'	" " "
1840'-1850'	" " "

Note: The basalt in the above 16 samples, 1620'-1630' through 1840'-1850' (230') is quite well preserved, practically no disintegration.

2260'-2270'	The basalt in this sample is identical in physical properties to the above 16 samples. A black, highly shiny mineral is associated with the basalt. Its index of refraction is 1.543±0.0002. Optical and physical properties indicate that it is a mineral species -- not identified at this time.
2270'-2280'	Basalt is quite similar to sample 2260'-2280'. However, in this there is only a trace of the shiny black mineral.
2290'-2300'	Basalt in this sample is identical to 2270'-2280'. No disintegration. An appreciable percent of crystalline quartz and chalcedony.
2300'-2310'	Identical to 2290'-2300'.
2310'-2320'	" "
2320'-2330'	" "