

County: Loudoun

VDMR Well No: W-889

Well No: Leesburg #4

Farm: Harry Daniel et. al.

Driller: Bear Creek Mining Co.

Location: 8 miles south of Leesburg, Loudoun Co., Va., 300 feet north
of Goose Creek.

Elevation: 280.0'

Total Depth: 226.0'

Drilling Commenced:

Well Completed:

Sample Description by: E. Clayton Toewe, October 1963

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-40.0	40.0	No core recovery
40.0-51.0	11.0	Weathered diabase
51.0-226.0	175.0	Diabase, light gray to dark gray, medium-grained. Plagioclase 45-70%, pyroxene 25-50%, magnetite 1-8%, biotite 1-5%, pyrite/chalcopyrite 1-5%, quartz 1-2%. Amphibole is present but the defined pyroxene percentage includes any amphibole, since they are not individually distinct in the core. Chalcopyrite is present throughout the core in very minor amounts, but was present in an appreciable amount from 149.8'-151.3'. Shear planes are randomly located throughout the core and occur with shiny black slickensides. Samples of these slickensides from the following intervals: 63.5'-64.6', 66.2'-66.8', 67.6'-68.0', 97.2'-98.1', 101.3'-101.5', 128.8'-130.0', 130.4'-130.7', 141.9'-142.4', 157.6'-157.9', 167.9'-168.1', 173.0'-174.5', 179.2'-179.8', 194.2'-194.5', 200.4'-200.5', and 224.0'-224.7' were analyzed with X-ray unit and/or the petrographic microscope. Various forms of chlorite were the only identifiable minerals present. (cont.)

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description (cont.)</u>
51.0-226.0	175.0	One thin vein of prehnite was noted at 216.1'. In several places in the core the diabase has been altered; in these areas most or all of the plagioclase has been altered to sericite and most of the pyroxene has been altered to amphibole. This diabase is present at the following intervals: 63.1'-65.3', 79.3'-79.6', 94.7'-95.9', 124.2'-124.9', 149.8'-151.3', and 166.0'-177.7'. The diabase from this hole is dated as Triassic.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-40.0	40.0	No core recovery
40.0-51.0	11.0	Diabase, weathered, light brown, medium-grained.
51.0-63.1	12.1	Diabase, dark gray to black, medium-grained. Plagioclase 50-60%, pyroxene 40-50%.
63.1-65.3	2.2	Diabase, altered, pinkish-green to gray-green, medium-grained. White plagioclase 35-40%, pink altered feldspar 30-35%, altered pyroxene 30-35%, magnetite 5-8%. Shear planes with black slickensides, cut the core from 63.5'-64.6'. Sample R-2392, 64.9 feet: thin section contains: sericite 60%, plagioclase (An 50-70) 10%, augite 15%, altered pyroxene 10%, magnetite 5%, quartz more than 1%.
65.3-79.3	14.0	Diabase, dark gray to black, medium-grained. Plagioclase 50-60%, pyroxene 45-55%. Shear planes with black slickensides, cut the core at 66.2'-66.8', and 67.6'-68.0'.
79.3-79.6	0.3	Diabase, pinkish-gray, medium-grained. Plagioclase 40-50%, pyroxene 35-45%, pink altered feldspar 15-25%.
79.6-94.7	15.1	Diabase, dark gray, medium-grained. Plagioclase 35-65%, pyroxene 35-45%, magnetite 2-5%, biotite (?) 1-2%.
94.7-95.9	1.2	Diabase, same as above, but 10-20% of the plagioclase is altered to a pink color.
95.9-124.2	28.3	Diabase, dark gray, medium-grained, plagioclase 55-65%, pyroxene 40-50%, magnetite 1-3%. Shear planes with black slickensides cut the core at 97.2'-98.1', and 101.3'-101.5'.
124.2-124.9	0.7	Diabase, same as above, but 5-15% of the plagioclase is altered to a pink color.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
124.9-149.8	24.9	Diabase, dark gray to black, medium-grained. Plagioclase 55-65%, pyroxene 35-45%, magnetite 1-4%. Shear planes with black slickensides cut the core from 128.8'-130.0', 130.4'-130.7', and 141.9'-142.4'. Poor core recovery from 141.0'-152.5'.
149.8-151.3	0.5	Diabase, same as above, but veins containing chalcopyrite are present. Pink altered feldspars are present along these veins.
151.3-166.0	14.7	Diabase, dark gray to black, medium-grained (but slightly finer-grained than above). Plagioclase 55-65%, pyroxene 40-50%. Shear plane with black slickensides, cuts the core from 157.6'-157.9'.
166.0-177.7	11.7	Diabase, medium to dark greenish gray, medium-grained. Altered white plagioclase 45-55%, pyroxene/amphibole 35-45%, pink altered feldspar 5-15%. Shear planes with black slickensides, cut the core at 167.9'-168.1', and 173.0'-174.5'. Sample R-2393, 174.3 feet: thin section contains: sericite 60%, augite 20%, hornblende (uralite ?) 10%, magnetite 5%, biotite 2%, chlorite (?) 2%, quartz 1%.
177.7-212.7	35.0	Diabase, medium to dark gray, medium-grained. Plagioclase 50-60%, pyroxene 45-50%. Shear planes cut the core at 179.2'-179.8', 194.2'-194.5', and 200.4'-200.5'.
212.7-226.0	13.3	Diabase, same as above, but lighter in color. Prehnite vein present at 216.1'. A shear plane with black slickensides, cuts the core from 224.0'-224.7'.