



County: Loudoun

VDMR Well No: W-887

Well No: Leesburg #2

Farm: H. Wortman

Driller: Bear Creek Mining Co.

Location: 9 miles south of Leesburg, Loudoun Co., Va. 800 feet south of  
Goose Creek.

Elevation: 345'

Total Depth: 300.0'

Drilling Commenced:

Well Completed:

Sample Description by: E. C. Toewe, October 1963

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-27.0	27.0	No recovery
27.0-38.6	11.6	Weathered diabase
38.6-300.0	261.4	Diabase, light gray to dark gray, medium-grained. Plagioclase 45-70%, pyroxene 25-50%, magnetite 1-8%, biotite 1-5%, chalcopyrite/pyrite 1-5%, quartz 1-2%. Amphibole is present in varying amounts, but because the pyroxene-amphibole distinction is difficult to make in this core, the minor amount of amphibole present was included with the pyroxene. Chalcopyrite is present throughout the core in very minor amounts, and was noted only where it was present in an appreciable percentage. Shear planes are randomly located throughout the core, and occur with either shiny black slickensides or a dull greenish-black filling. Samples of these slickensides from the following intervals: 38.0'-38.2', 39.8'-40.2', 44.6'-45.0', 100.5'-100.9', 108.2'-108.6', 116.5'-116.6', 145.7'-145.9', 159.0'-159.2', 184.4', 198.5'-198.7', 237.8'-237.9', 264.4'-264.9', and 268.6'-269.1', were analyzed (cont.)

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u> (cont.)
38.6-300.0	261.4	<p>with the X-ray unit and/or the petrographic microscope. Various forms of chlorite were the only identifiable minerals present. Stilpnomelane, a form of iron-rich chlorite, was identified from a dull greenish-black vein at 94.3'-94.5'. Intervals containing black veins (211.9-212.0', 212.0'-212.2', and 231.2'-231.4') were examined, and chlorite and chalcopyrite were the only identifiable minerals present. White veins of prehnite/datolite are present (222.8'-223.0', 267.5'-268.4', and 280.6'-280.8') and one vein (289.6'-289.9') contains a relatively unidentifiable mixture of ziolite minerals. In several places in the core, the diabase has been altered to such an extent that the alteration is observable megascopically. In thin sections of altered diabase, most or all of the plagioclase has been altered to sericite, most of the pyroxene has been altered to amphibole, and the ore minerals (mainly magnetite) are generally present as skeletal crystals. This diabase is present at the following intervals: 100.3'-108.6', 162.8'-164.8', 173.4'-174.9', 222.5'-223.3', and 263.7'-268.1'. The diabase from this hole is dated as Triassic.</p>

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-27.0	27.0	No core recovery
27.0-38.6	11.6	Diabase, weathered, light green-brown to red-brown, medium-grained. Core recovery in the form of small rounded fragments.
38.6-49.7	11.1	Diabase, dark gray, medium-grained. Plagioclase 55-60%, pyroxene 40-45%, magnetite 2-5%, pyrite 1-2%. Shear planes with black shiny slickensides cut the core at 38.0'-38.2, 39.8'-40.2', and 44.6'-45.0'.
49.7-93.8	44.1	Diabase, same as above, but a bit lighter in color. A dull greenish-black vein (stilpnomelane) is present from 94.3'-94.5'. Sample R-2389, 68.5 feet: thin section contains: plagioclase feldspar (An 50-70) 60%, augite 30%, magnetite 5%, biotite 5%, quartz more than 1%.
93.8-96.9	3.1	Diabase, same as above, but cut by many small shear areas.
96.9-100.3	3.4	Diabase, medium gray, medium-grained. Plagioclase 55-60%, pyroxene 35-45%, magnetite 5%, biotite 2-5%, and pyrite 1%.
100.3-108.6	8.3	Diabase, same as above, but 5-10% of the plagioclase is apparently altered. Shear planes with black slickensides cut the core at 100.5'-100.9', and 108.2'-108.6'. Sample R-2390, 106.5': thin section contains: plagioclase feldspar altered to sericite 45%, augite 25%, pyroxene altered to hornblende-uralite 6%, plagioclase feldspar (An 50-70) 7%, biotite 8%, magnetite 7%, and quartz 2%.
108.6-140.0	31.4	Diabase, medium to dark gray, medium-grained. Plagioclase 55-65%, pyroxene 45-50%, magnetite 2-5%, pyrite 1-2%. A shear plane with black slickensides cuts the core at 116.4'-116.7'.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
140.0-144.9	4.9	Diabase, pinkish green to gray, medium-grained. Altered interval. Plagioclase (?) 60-70%, pyroxene/amphibole 35-40%, magnetite 1-2%, pyrite more than 1%. Shear plane with black slickensides cuts core at 144.0'-144.6'.
144.9-162.8	17.9	Diabase, medium gray, medium-grained. Plagioclase 55-60%, pyroxene 40-45%, magnetite 2-5%. Shear planes with black slickensides cut core at 145.7'-145.9', and 159.0'-159.2'.
162.8-164.8	2.0	Diabase, pinkish green to gray, medium-grained. Plagioclase 45-50%, pyroxene 40-45%, pink altered feldspar 10-15%, magnetite 2-5%.
164.8-173.4	8.6	Diabase, dark gray, medium-grained. Plagioclase 55-65%, pyroxene 45-50%.
173.4-174.9	1.5	Diabase, light gray, medium-grained. White plagioclase 50-55%, pyroxene 35-40%, pink altered feldspar 15-20%, chalcopyrite 2-4%, magnetite 1-2%. Sample R-2391, 174.2 feet: thin section contains: Sericite 65%, augite 28%, chalcopyrite 5%, magnetite 2%.
174.9-211.8	36.9	Diabase, dark gray to black, medium-grained. Plagioclase 50-60%, pyroxene 40-45%, magnetite 2-5%. Shear planes with black slickensides cut the core at 184.4' and 198.5'-198.7'.
211.8-220.8	9.0	Diabase, medium gray, medium-grained. Plagioclase 55-60%, pyroxene 40-45%, magnetite 3-5%. A black vein (chlorite) containing small fragments of plagioclase, cuts the core from 211.7'-212.3'. Chalcopyrite is associated with this vein.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
220.8-222.5	1.7	Diabase, same as above, about 4-8% of the white feldspars have been altered to a pink mineral (sericite ?).
222.5-223.3	0.8	Diabase, cut by light-colored veins (prehnite). Some alteration associated with veins.
223.3-243.7	20.4	Diabase, medium gray, medium-grained. Plagioclase 50-60%, pyroxene 40-45%, magnetite 3-8%. A shear plane with black slickensides cuts the core at 237.8'-237.9'. A dark vein (chlorite) cuts the core at 231.2'-231.4'.
243.7-261.9	18.2	Diabase, dark gray to black, medium-grained. Plagioclase 50-55%, pyroxene 45-50%, magnetite 2-5%.
261.9-263.7	1.8	Diabase, medium to dark gray, medium-grained. Plagioclase 55-65%, pyroxene 40-45%, magnetite 2-5%.
263.7-268.1	4.4	Diabase, light gray, medium-grained. White plagioclase 45-50%, pyroxene 30-35%, pink altered feldspar 15-20%, magnetite 1-3%. Light veins (prehnite) cut the core from 267.5'-268.4'. A shear plane with black slickensides cuts the core at 264.4'-264.9'.
268.1-275.8	7.7	Diabase, medium to dark gray, medium-grained. Plagioclase 55-65%, pyroxene 40-45%, magnetite 3-8%. A shear plane with black slickensides cuts the core at 268.6'-269.1'.
275.8-279.0	3.2	Diabase, light to medium gray, medium-grained. Plagioclase 60-65%, pyroxene 35-40%, magnetite 1-2%.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
279.0-286.5	7.5	Diabase, medium to dark gray, medium-grained. Plagioclase 60-70%, pyroxene 30-35%, magnetite 5-8%. Prehnite veins cut the core from 279.9'-280.9'.
286.5-300.0	13.5	Diabase, dark gray, medium-grained. Plagioclase 50-55%, pyroxene 45-50%, magnetite 5-9%. A light vein (zeolite ?) cuts the core at 289.6'-289.9'.

Virginia Division of Mineral Resources  
E. C. Toewe - Geologist  
October 7, 1963