INTERVAL SHEET

WWCR - 39

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VDMR Well No: 1347

Date rec'd: August 11, 1965

Sample Interval: from 0 to 265

PROP: National Park Service (Shenandoah)
(Big Meadows #1, Site #2)

Number of samples:

COMP: Valley Drilling Company

Total Depth: 265 feet

COUNTY: Madison (Syria)

Oil or Gas: Water:X Exploratory:

From-To	From-To	From-To	From-To
0 - 5	150 - 155	-	-
5 - 10	155 - 160	-	-
10 - 15	160 - 165	-	-
15 - 20	165 - 170	-	-
20 - 25	170 - 175	-	-
25 - 30	175 - 180	-	-
30 - 35	180 - 185	-	-
35 - 40	185 - 190	-	-
40 - 45	190 - 195	-	-
45 - 50	195 - 200	-	-
50 - 55	200 - 205	-	-
55 - 60	205 - 210	-	-
60 - 65	210 - 215	-	-
65 - 70	215 - 220	-	-
70 - 75	220 - 225	-	-
75 - 80	225 - 230	-	-
80 - 85	230 - 235	-	-
85 - 90	235 - 240	-	-
90 - 95	240 - 245	-	-
95 - 100	245 - 250	-	-
100 - 105	250 - 255	-	-
105 - 110	255 - 260	-	-
110 - 115	260 - 265	-	-
115 - 120	-	-	-
120 - 125	-	-	-
125 - 130	-	-	-
130 - 135	-	-	-
135 - 140	-	-	-
140 - 145	-	-	-
145 - 150	-	-	-

Washed samples

OWNER: National Park Service (Shenandoah) VDMR - 1347
(Big Meadows Test Hole #1, Site #2) WWCR - 39
DRILLER: Valley Drilling Corporation TOTAL DEPTH: 265'

GEOLOGIC LOG

Depth in feet

OVERBURDEN (0 - 55)

0 - 5	Clay – brown with coarse sand-size fragments of weathered greenstone; plagioclase, chlorite, magnetite.
5 - 10	"
10 - 15	Weathered Metamorphosed Basalt (probably a boulder) – light orange to green-gray; plagioclase, epidote, chlorite, magnetite; iron oxides and clay.
15 - 20	" with minor chloritic phyllite.
20 - 25	Clay and Metamorphosed Basalt – orange-brown to gray-green; angular fragments of metamorphosed basalt of fine- to coarse-pebble size; iron-oxide stains.
25 - 30	"
30 - 35	" increase in iron stains.
35 - 40	Pebbles and Clay – light gray gray-green, and orange-brown; angular pebbles of chloritic phyllite, metamorphosed basalt, epidotized basalt; orange-brown clay; vein quartz and minor hematitic metamorphosed basalt with slender veins of iron-oxide stained calcite.
40 - 45	" no calcite, some rock fragments very kaolinized.
45 - 50	"
50 - 55	" small amygdules filled with hematite-bearing epidote.

CATOCTIN FORMATION (55 - 100)

55 - 60	Metamorphosed Basalt – blue-gray fine-grained; plagioclase, epidote, chlorite, magnetite, and calcite.
60 - 65	" (micro-subophitic texture with phenocrysts of pyroxene and plagioclase noted in thin section).
65 - 70	" with a few 0.2 to 0.5 mm crystals of magnetite.
70 - 75	" more calcite; red vein of hematite.

75 - 80 Metamorphosed Basalt — blue-gray, fine-grained; plagioclase, epidote, chlorite magnetite and calcite.

80 - 85 "

85 - 90 Metamorphosed Basalt and Jasper — metamorphosed basalt: dark gray-green, fine-grained, amygdaloidal; epidote, chlorite, plagioclase; jasper: dark purple-gray conchoidal fractures; small veins of hematite.

90 - 95 " with veins of quartz and epidote.

95 - 100 Metamorphosed Basalt — dark gray-green, medium-grained, amygdaloidal; plagioclase, epidote, chlorite, minor quartz, and hematite vein.

CONTACT ZONE (100 - 115)

100 - 105 Epidotized Basalt — light green-gray, slightly yellowish; medium-grained, relict amygdaloidal structure; epidote, plagioclase, chlorite, magnetite; angular quartz fragments imbedded in matrix; amygdules filled with green quartz, red calcite, jasper and epidote.

105 - 110 " with fewer amygdules; part of this sample is epidotized granodiorite; plagioclase almost completely altered to epidote quartz, and chlorite minor dark green-gray metamorphosed basalt.

110 - 115 " with some of the granodiorite feldspar much less altered.

PEDLAR FORMATION (115 - 265)

115 - 120 Sheared and Epidotized Granodiorite — light green-gray, yellow-green and dark blue-gray; fine- to very coarse-grained; spidote, alkali feldspar (mostly albite), quartz, chlorite, apatite, zircon and zeolite veins.

120 - 125 "

125 - 130 " almost all feldspar altered to epidote.

130 - 135 Sheared Granodiorite — dark green-blue-gray, very fine- to very-coarse-grained, cataclastic texture; albite, quartz, chlorite, epidote, minor potash feldspar, trace of magnetite.

135 - 140 "

140 - 145 "

145 - 150 Sheared Granodiorite — dark green-blue-gray, very fine- to very coarse-grained, cataclastic texture; perthite, pink potash feldspar with green albite, quartz, chlorite, epidote, and trace of magnetite.

150 - 155 Sheared and Epidotized Granodiorite — light gray-green, yellow-green, minor dark gray, very fine- to very- coarse-grained, mortar structure; perthitic and antiperthitic alkali feldspar, cracked and distorted and partially- to completely-altered to epidote; fine-grained mortar of chlorite, epidote and quartz; part of the potash feldspar is pink colored; trace of zircon.

155 - 160 "

160 - 165 "

165 - 170 "

170 - 175 " almost a unakite.

175 - 180 "

180 - 185 "

185 - 190 "

190 - 195 "

195 - 200 "

200 - 205 Altered Granodiorite — dark blue-gray, minor light gray, yellow-green and pink; very fine- to very coarse-grained; chlorite, epidote, albite, quartz, minor magnetite and mica; trace of pyrite and zircon.

205 - 210 "

210 - 215 "

215 - 220 "

220 - 225 "

225 - 230 "

230 - 235 "

235 - 240 "

240 - 245 "

245 - 250 "

250 - 255	Altered Granodiorite — dark blue-gray, minor light gray, yellow-green and pink; very fine- to very coarse-grained; chlorite, epidote, albite, quartz, minor magnetite and mica; trace of pyrite and zircon.
255 - 260	"
260 - 265	" with minor hornblende and more magnetite.

GEOLOGIC SUMMARY

	Rock Unit	Age
0-55	Overburden	Recent
55-100	Catoctin Formation	Precambrian ?
100-115	Contact zone	
115-265	Pedlar Formation	Precambrian

Virginia Division of Mineral Resources
Hollis N. Walker - Geologist
September 17, 1965

Partial Chemical Analysis* of Big Meadows Test Hole No. 1
(values in Parts Per Million except for pH)

pH	7.3	Phosphate	0.55
Total Hardness	60.0	Iron	0.10
Calcium Hardness	50.0	Nitrate	0.004
Silica	6.4	Manganese	0.0
Sulfate	3.0	Turbidity	0.0

* Virginia Division of Mineral Resources, Sept. 17, 1965

Chemical analyses** of Big Meadows Test Hole No. 3 and No. 4
(values in Parts Per Million except for pH)

	Test Hole #3	Test Hole #4
pH (Electrometric)	8.3	8.2
Total Solids @ 103° C	90.0	89.0
Ignition Loss (organic & volatile)	29.0	25.0
Mineral Residue (non-volatile	61.0	64.0
Free Carbon Dioxide	0.0	0.0
P. Alkalinity as $CaCO_3$ (carbonate)	8.0	4.0
M. O. Alkalinity as $CaCO_3$ (bicarbonate)	58.0	66.0
Total Hardness as $CaCO_3$ (titration)	69.5	71.2
ANALYSIS OF MINERAL RESIDUE		
Silica and insoluable matter	0.5	0.5
Iron	0.02	0.01
Manganese	NIL	NIL
Calcium	14.0	14.5
Magnesium	8.4	8.5
Sodium & Potassium (as Sodium)	3.8	4.4
Bicarbonate (calculated)	70.8	80.5
Carbonate (Calculated)	4.8	2.4
Chloride	5.0	4.0
Sulfate	4.5	4.9
Nitrate	0.7	0.6
Fluoride	NIL	NIL

** Froehling and Robertson, Inc., October 3, 1966