

OWNER: National Park Service  
Skyland #4 (Well #2)  
DRILLER: Frank W. Martin Drilling Co.  
COUNTY: Page (Ida)

VDMR #1033  
WWCR #83  
TOTAL DEPTH: 500'

### GEOLOGIC LOG

#### Catoctin Formation (0-10')

- 0-5 Residuum — light-green and brown, medium-grained greenstone; epidote, chlorite, quartz, serpentine, iron oxides.
- 5-10 Residuum — medium-red-brown, medium- and fine-grained phyllite and greenstone; sericite, chlorite, epidote, quartz and iron oxides.

#### Swift Run Formation (10-365')

- 10-15 Weathered Phyllite — light-olive-brown, foliated, flaky, fine-grained; chlorite, sericite, quartz, iron oxide.
- 15-20 As above.
- 20-25 As above.
- 25-30 As above.
- 30-35 As above — greener; less brown (bedrock).
- 35-40 As above — browner.
- 40-45 Chlorite Phyllite — medium-gray-green, shiny, fine-grained, foliated and corrugated; chlorite, sericite, iron oxides, minor quartz.
- 45-50 As above — iron stained; veins and augen of quartz.
- 50-55 As above — less iron stain, layers of sericite and dark chlorite with veins of the chlorite transecting the sericite.
- 55-60 As above — less veining.
- 60-65 As above.
- 65-70 Sericite Phyllite — medium-gray, fine-grained, shiny, foliated, knotted; sericite, chlorite, quartz; porous quartz veins, limonite stain.
- 70-75 As above.

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- 75-80 Phyllite and Sandy Phyllite — 50% as above; 50% gray-green, brownish, fine-grained with medium-sized quartz sand; trace of cubes of goethite after pyrite; grain mount: abundance of dusty opagues, minor relicts of amphibole and feldspar in a fibrous chlorite-sericite matrix.
- 80-85 As above — only trace amount of gray phyllite without sand; occasional granule-sized rounded quartz.
- 85-90 As above.
- 90-95 As above — minor vein leached, porous and iron stained quartz.
- 95-100 As above.
- 100-105 As above.
- 105-110 Sandy Phyllite — medium-gray, slightly greenish, translucent and shiny; sericite, chlorite; abundant sand, medium- to granule size; X-ray examination: abundant sericite and quartz; chlorite and stilpnomelane present in minor amounts.
- 110-115 As above.
- 115-120 As above — less sand; minor vein quartz.
- 120-125 As above — minor calcite vein.
- 125-130 As above — no veins.
- 130-135 As above.
- 135-140 As above.
- 140-145 As above.
- 145-150 Chloritic Metamorphosed Arkose — green-gray, fine-grained, shiny, slightly foliated; medium- to very-coarse quartz sand and irregular patches pink albite in a streaky chlorite-sericite matrix; purple-red hematite stain; tiny calcite veins; trace magnetite; grain mount: minor epidote, amphibole, garnet, apatite.
- 150-155 As above.
- 155-160 As above.
- 160-165 As above — feldspar in distorted granules.
- 165-170 As above.

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- 170-175 Chloritic Metamorphosed Arkose — green-gray, fine-grained, shiny, slightly foliated; medium- to very-coarse quartz sand and irregular patches pink albite in a streaky chlorite-sericite matrix; purple-red hematite stain; tiny calcite veins; trace magnetite; grain mount: minor epidote, amphibole, garnet, apatite, feldspar in distorted granules.
- 175-180 Chloritic Metamorphosed Arkose — medium-gray, greenish; medium- to very-coarse quartz sand; abundant anhedral partially rounded pink albite; greenish-white albite, subhedral, up to 5 mm (may be authigenic); fine-grained matrix, chlorite and sericite; quartz sand is colorless, gray, blue, white and pink; trace calcite.
- 180-185 As above.
- 185-190 As above.
- 190-195 As above.
- 195-200 As above — with moderate epidote.
- 200-205 Chloritic Metamorphosed Arkose — dark-greenish-gray; pebbles and granules, composed of quartz and pink albite to 10 mm; medium- to very-coarse quartz sand (colorless, yellow, white, and gray); matrix: fine-grained chlorite, sericite, epidote, calcite, dusty magnetite; no foliation.
- 205-210 As above — X-ray examination: chlorite and plagioclase are most abundant minerals; other evidence as above.
- 210-215 As above.
- 215-220 As above.
- 220-225 As above.
- 225-230 As above — (minor foliated brown phyllite probably due to contamination).
- 230-235 As above — (no phyllite contamination).
- 235-240 As above.
- 240-245 Chloritic Metamorphosed Arkose — dark-greenish-gray; fragments of quartz-albite rock (to 20 mm), and coarse sand in fine-grained chlorite, sericite matrix; some portions of sample were fine-grained chlorite-sericite with very little included quartz or feldspar, minor calcite.

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- 245-250 Chloritic Metamorphosed Arkose — dark-greenish-gray; fragments of quartz-albite rock (to 20 mm), and coarse sand in fine-grained chlorite, sericite matrix; some portions of sample were fine-grained chlorite-sericite with very little included quartz or feldspar, minor calcite, slight foliation in low quartz portions.
- 250-260 As above — maximum size of quartz-feldspar rock inclusions — 10 mm
- 260-265 As above — trace pyrite.
- 265-270 As above — no pyrite, no foliation, more inclusions of quartz-feldspar rock.
- 270-275 As above.
- 275-280 As above — albite slightly green.
- 280-285 Chloritic Metamorphosed Arkose — medium-gray, slightly green; medium- to very-coarse quartz sand; fine pebbles of quartz; fine pebbles pale-pink to light-green plagioclase which have been veined and altered to chlorite, sericite, and epidote; matrix — chlorite, sericite, epidote, and calcite; grain mount examination: minor apatite and zircon; slight foliation in small part of sample.
- 285-290 As above.
- 290-295 As above.
- 295-300 As above — slightly darker.
- 300-305 As above.
- 305-310 As above — more epidote.
- 310-315 As above — fine-grained epidote in patches and stringers.
- 315-320 As above — one large pebble quartz-plagioclase rock — 12 mm.
- 320-325 As above — largest pebble is 6 mm.
- 325-330 As above.
- 330-335 As above — (sample contained fragments of sericitic phyllite and sandy phyllite; probably contamination from above.)

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- 335-340 Metamorphosed Granodiorite Conglomerate — dark-gray; greenish; dull and dense in appearance in dry cuttings; highly saussuritized granodiorite; albite, quartz, epidote, chlorite; nearly impossible to distinguish sericite-chlorite-saussurite cement of the conglomerate from veins in the granodiorite; certain portion of the sample appear to contain stream worn pebbles of quartz and feldspar.
- 340-345 As above.
- 345-350 As above.
- 350-355 As above — thin section (of this level because of larger cuttings): hypidomorphic granular texture; albite to 10 mm, quartz to 5 mm; accessories are apatite, zircon, magnetite; the plagioclase partially to completely altered to epidote, sericite, calcite, and minor chlorite, usually traces of the twinning are preserved; abundant fine-grained veins of sericite, saussurite, and calcite, often on mineral boundaries.
- 355-360 As above.
- 360-365 As above.
- Pedlar Formation (365-500')
- 365-370 Granodiorite — medium-gray, slightly greenish; albite to 10 mm, quartz to 4 mm, garnet to 1 mm, chlorite, sericite, calcite; grain mount: saussuritization of feldspar, relicts of pyribole, minor additional minerals; zircon, apatite, magnetite; veins of yellow-green epidote, dark-green chlorite, minor calcite.
- 370-375 As above — only trace of garnet.
- 375-380 As above — less alteration of feldspar more chlorite.
- 380-385 As above — yellow-green epidote abundant in 0.5-3 mm patches; vein quartz; thin section (of this level because of larger cuttings); much the same as that of the granodiorite in the conglomerate, except alteration less extensive, pyroxene partially altered to chlorite; ilmenite and sphere.
- 385-390 As above — more greenish-black chlorite and saussurite; no vein quartz.
- 390-395 As above — less yellow-green epidote.
- 395-400 Granodiorite — greenish-black and pale-green; average grain size 1.5-2 mm; quartz, feldspar, pyroxene, chlorite, occasional light green plagioclase to 10 mm; chlorite and epidote veins.

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- 400-405 Granodiorite — greenish-black and pale-green; average grain size 1.5-2 mm; quartz, feldspar, pyroxene, chlorite, occasional light green plagioclase to 10 mm; chlorite and epidote veins.
- 405-410 As above.
- 410-415 As above.
- 415-420 As above.
- 420-425 As above — trace pyrite.
- 425-430 Granodiorite — dark- to light-gray-green; average grain size 0.5 to 5 mm; plagioclase, quartz, chlorite, saussurite; minor magnetite and yellow-green epidote; trace pyrite.
- 430-435 As above.
- 435-440 As above — no pyrite.
- 440-445 As above.
- 445-450 As above.
- 450-455 As above.
- 455-460 As above — vein quartz.
- 460-465 As above — with minor garnet, no vein quartz (one fragment sericite phyllite probably contamination from above).
- 465-470 As above — (few fragments sandy phyllite probably contamination from one above).
- 470-475 Granodiorite — pale-green to greenish-black, splotchy; pale-yellow-green saussuritized plagioclase and white potash feldspar to 10 mm; 1-3 mm irregular grains quartz; fine-grained; dark chlorite stringers, patches and veins; minor magnetite and pyrite (X-ray evidence for potash feldspar).
- 475-480 As above.
- 480-485 As above.
- 485-490 As above.

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490-495 Granodiorite — medium-gray, slightly greenish, average grain size one mm; plagioclase, quartz, pyroxene, epidote, chlorite; minor magnetite.

495-500 As above — very coarse and splotchy, 0.5 mm to 20 mm.

GEOLOGIC SUMMARY

	<u>ROCK UNIT</u>	<u>TIME ROCK UNIT</u>
0-10	Catoctin Formation	Precambrian
10-365	Swift Run Formation	Precambrian
365-500	Pedlar Formation	Precambrian

Virginia Division of Mineral Resources  
Hollis N. Walker, Geologist  
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