

DESCRIPTION OF MAP UNITS

- Qd** Quaternary deposits - Pleistocene glacial and interglacial deposits including clay, silt, sand, gravel, till, and colluvium and alluvium of Holocene age. Not shown where bedrock is Ju.
- Ju** Newark Supergroup (undifferentiated) - Conglomerate and sandstone, siltstone, and mudstone of the Towaco and Boonton Formations and basalt of the Hook Mountain Formation of Olsen (1980). Concealed in much of the map area by Quaternary deposits not shown on map.

Rocks of the Reading Prong

Byram Intrusive Suite

- Ybh** Hornblende granite - Medium- to coarse-grained, pink to buff, gneissoid to indistinctly foliated granite and sparse granite gneiss composed principally of microcline micropertite, quartz, oligoclase, and hornblende. Includes small bodies of pegmatite and amphibolite not shown on map.

Metasedimentary Rocks

- Yb** Biotite-quartz-feldspar gneiss - Medium-grained, gray to tan, locally rusty weathering, well-layered and foliated gneiss which is variable in texture and composition. Composed of oligoclase, microcline micropertite, quartz, and biotite. Locally contains garnet, graphite, and sillimanite. Unit is interlayered with meta-quartzite south of the Mendham fault.

- Yk** Potassic feldspar gneiss - Medium-fine- to medium-grained, tan to pinkish-white, moderately-foliated rock composed principally of quartz, microcline, and lesser oligoclase.

Losee Metamorphic Suite

- Ylo** Quartz-oligoclase gneiss - Medium- to coarse-grained, white to light greenish-gray, well-layered gneiss composed of quartz, oligoclase, and sparse hornblende, chlorite, and altered clinopyroxene. Locally contains amphibolite layers.

- Ylb** Biotite-quartz-oligoclase gneiss - Medium-fine- to medium-grained, greenish-gray, massive, moderately-layered, well-foliated gneiss containing oligoclase, quartz, biotite, and locally garnet. Commonly interlayered with amphibolite.

- Yd** Diorite - Medium- to coarse-grained, greenish-gray to brownish-gray, greasy-lustered, massive to moderately-foliated diorite to quartz diorite composed of andesine or oligoclase, clinopyroxene, hornblende, hypersthene, sparse biotite, and variable amounts of quartz. Amphibolite and mafic-rich quartz-plagioclase gneiss layers are common.

MAP SYMBOLS

- Contact - Dotted where concealed
- High angle faults - Dashed where approximate; dotted where concealed. U: upthrown side D: downthrown side.
- Antiform - Showing crestline and direction of plunge
- Synform - Showing troughline and direction of plunge
- Strike and dip of crystallization foliation
- Inclined
- Vertical
- Strike and dip of mylonitic foliation
- Bearing and plunge of mineral lineation
- Abandoned stone quarry

REFERENCES

- Bayley, W. S., Salisbury, R. D., and Kummel, H. B., 1914, Description of the Raritan Quadrangle (New Jersey); U.S. Geological Survey Geologic Atlas, Folio 191.
- Lytle, P. T., and Epstein, J. B., 1987, Geologic map and cross sections of the Newark 1° x 2° quadrangle, New Jersey, Pennsylvania, and New York; U.S. Geological Survey Miscellaneous Investigations Series I-1715, Scale 1:250,000.
- Olsen, P. E., 1980, The latest Triassic and Early Jurassic Formations of the Newark Basin (eastern North America, Newark Supergroup) - stratigraphy, structure and correlation: New Jersey Academy of Science, The Bulletin, v. 25, p. 25-51.

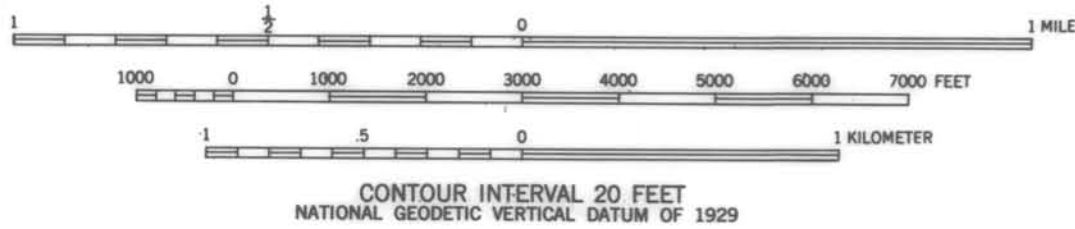
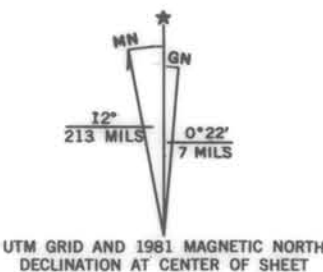
NOTES

Relationships shown in the northwestern portion of this map cannot be fully understood without reference to the contiguous area of "Provisional Geologic Map of Proterozoic and Lower Paleozoic Rocks of the Mendham Quadrangle, New Jersey," by Richard A. Volkert, New Jersey Geological Survey, 1988.

The interpretations presented here were prepared for the "Bedrock Geologic Map of New Jersey," to be published at a scale of 1:100,000. They are presented here provisionally at a scale of 1:24,000.



Base map from U.S. Geological Survey, 1954
Photorevised, 1981
10,000-foot grid based on New Jersey coordinate system
1000-meter Universal Transverse Mercator grid tics, zone 18



PROVISIONAL GEOLOGIC MAP OF THE PROTEROZOIC ROCKS
OF THE MORRISTOWN QUADRANGLE, NEW JERSEY

by
Richard A. Volkert

Geology mapped 1985-1986 by Richard A. Volkert.