



**EXPLANATION**

**Recent**

Qal Alluvium  
Floodplain sediments consisting of a basal layer of gravel overlain by brown sandy clay

td Diabase  
Very fine grained to massive diabase dikes

ty Hypersthene tonalite  
Coarse-grained, dark dikes

az Quartz veins  
Includes:  
az, barren quartz.  
aw, quartz-hydroxide.  
qs, quartz-sulphide.  
af, quartz-specularite or ilmenite.  
am, quartz-muscovite.  
at, quartz-tourmaline.  
qt, quartz-specularite-tourmaline.  
Date indicate concentrated quartz float

sl Siliceous belts  
Probably silicified breccia zones and inclusions

pg Pegmatite  
Microcline-quartz and quartz-muscovite pegmatite

ap Aplite  
Very fine grained light-gray to dark-greenish or brownish-gray; dip shown locally

gr Albite granodiorite  
Medium- to coarse-grained, massive, locally gneissic or porphyritic dark-gray albite granodiorite; numerous inclusions of phyllite and gneiss, especially near borders; includes small areas of hornblende gabbro

gb Hornblende gabbro  
Medium- to coarse-grained gray to black intrusive masses of hornblende gabbro; includes small dikes of hornblende basalt and small areas of hornblende granite

bs Metabasalts  
Massive basalt, basalt porphyry, and amygdaloid; includes some interbedded metafelsite, greenstone, and chlorite phyllite

ft Metafelsites  
Massive to poorly foliated, light to medium-dark volcanic rocks; includes some metauff and breccia, apophyllite(?), and interbedded metabasalts

gs Greenstone  
Poorly foliated greenstone and amygdaloid, with interbedded chlorite phyllite

ph Phyllites  
Sericite-chlorite phyllites with interbedded quartzite and metaconglomerate, metasedimentary rocks and meta-tuffs

bgn Biotite gneisses  
Equigranular and porphyroblastic mica gneisses; includes minor hornblende gneiss, biotite schist, and interbedded sericite-chlorite phyllites

--- Contact  
Dashed where approximately located; dotted where concealed by water

- - - Inferred contact

~ ~ ~ Syncline, showing trace of axial plane and bearing and plunge of axis

~ ~ ~ Probable syncline, showing trace of axial plane and bearing and plunge of axis

→ Plunge of fold axes

↗ Strike and dip of beds

↖ Strike of vertical beds

↗ Strike and dip of foliation  
Includes slaty or phyllitic cleavage, schistosity, and gneissic banding

↖ Strike and dip of foliation and plunge of lineation

↖ Strike of vertical foliation

↗ Bearing and plunge of lineation  
i, intersection of bedding and cleavage  
w, wrinkles on foliation

↖ Strike and dip of phyllite inclusion in granite

↖ Strike and dip of joints

Mine

Prospect or small quarry

S Sulfides

2 Locality referred to in text

**Middle or upper Pleistocene(?)**

**Lower Pleistocene(?)**

**Memorized sedimentary and volcanic rocks, relative ages uncertain**

QUATERNARY  
TRIASSIC  
PALEOZOIC (?)

**GEOLOGIC MAP OF THE HAMME TUNGSTEN DISTRICT, NORTH CAROLINA AND VIRGINIA**

Base map from Corps of Engineers, U. S. Army

INTERIOR-GEOLOGICAL SURVEY, WASHINGTON, D. C.—61175  
Geology by John M. Parker 3d mapped at intervals during period 1949-53, and by M. H. Staats in 1954. Mapping in vicinity of Hamme Mine by G. H. Espenshade and others, published in 1947, is included