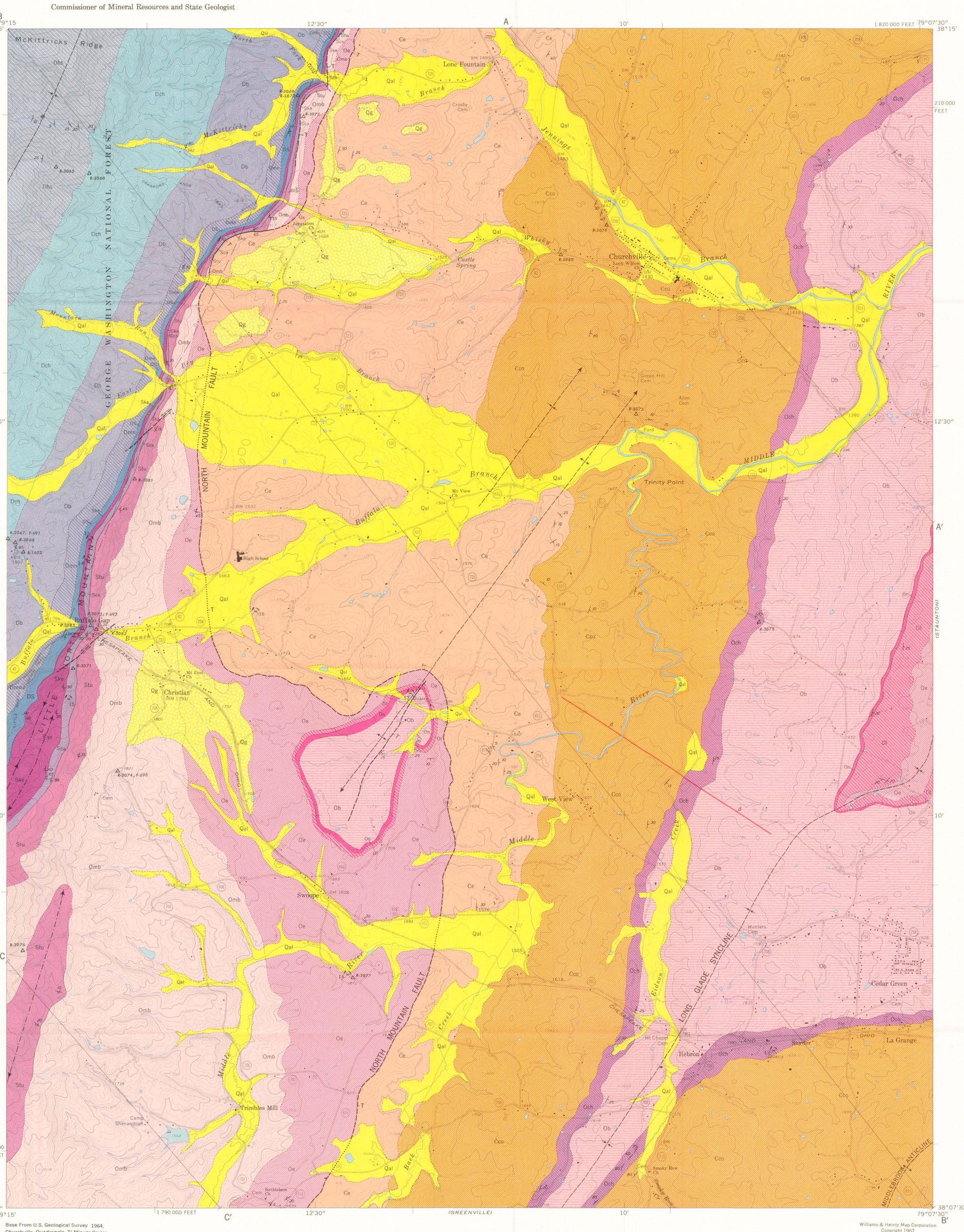
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT
DIVISION OF MINERAL RESOURCES
James L. Calver
Commissioner of Mineral Resources and State Geologist






Base From U.S. Geological Survey 1964,
Churchville Quadrangle, 7½-Minute Series

Williams & Heintz Map Corporation
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# GEOLOGIC MAP OF THE CHURCHVILLE QUADRANGLE, VIRGINIA

Geology by Eugene K. Rader

1967

1964 MAGNETIC DECLINATION

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET

QUADRANGLE LOCATION

## EXPLANATION

**CENOZOIC — QUATERNARY**

**Qal** — Alluvium

**Qg** — Terrace gravel

**MESOZOIC**

**d** — Alkalic dike
*Nepheline syenite, teschenite-syenite, and teschenite-picrite.*

**PALEOZOIC — DEVONIAN**

**Dhs** — Hampshire Formation
*Chiefly red shale, mudrock, and sandstone.*

**Dch** — Chemung Formation
*Chiefly gray shale and sandstone with thin conglomerates and a few red zones.*

**Db** — Brallier Formation
*Greenish to brown micaceous shale with thin intercalated layers of gray, fine-grained sandstone.*

**Dmn** — Millboro Shale—Needmore Formation
*Millboro: black fissile shale. Needmore: olive-green shale with gray argillaceous limestone.*

**SILURIAN-DEVONIAN**

**DS** — Lower Devonian—Upper Silurian rocks
*Oriskany Sandstone: gray coarse-grained, argillaceous sandstone, stained with iron oxide; Licking Creek Limestone: light- to medium-gray cherty and sandy limestone; Healing Springs Sandstone: light-gray coarse-grained sandstone, stained with iron oxide; Coeymans Limestone: medium- to light-gray coarse-grained, crinoidal limestone; Keyser Formation: gray to white, medium- to coarse-grained limestone with sandstone near the middle; and Tonoloway Formation: medium- to dark-gray, thin-bedded, argillaceous limestone.*

**SILURIAN**

**Ske** — Keefer Sandstone
*Gray, medium- to thick-bedded sandstone.*

**Sca** — Cacapon Formation
*Red and green shales, gray sandstone, and ferruginous quartzite.*

**Stu** — Tuscarora Formation
*Gray to white, thick-bedded sandstone with a few beds of conglomerate.*

**ORDOVICIAN**

**Omb** — Martinsburg Formation
*Olive-green to gray, subfissile shale with argillaceous sandstone at top.*

**Oe** — Edinburg Formation
*Dark-gray to black, argillaceous limestone, black fissile shale, and cobbly, coarse-grained, fossiliferous limestone.*

**Ol** — Lincolnshire Formation
*Dark-gray, finely crystalline limestone with nodules and stringers of black chert.*

**On** — New Market Limestone
*Dove-gray, compact, thick-bedded limestone.*

**Ob** — Beekmantown Formation
*Light- to dark-gray, fine-grained limestone, light-gray, fine-grained dolomite, and dark-gray, coarse-grained recrystalline dolomite.*

**Och** — Chepultepec Formation
*Bluish-gray to black limestone with black chert nodules; lower part contains siliceous laminae that are exposed in relief on weathered surfaces.*

**CAMBRIAN**

**Ꞓco** — Conococheague Formation
*Bluish-gray limestone and light-gray dolomite with interbedded thin sandstone.*

**Ꞓe** — Elbrook Formation
*Thin-bedded, argillaceous limestone and gray, fine-grained dolomite that commonly weathers to iron oxide stained slabs and thin plates.*

### CONTACTS

exposed
approximate
covered

### FOLDS

Anticline—approximate trace of axial plane and direction of plunge of axis
Syncline—approximate trace of axial plane and direction of plunge of axis
Axial trace of minor fold on overturned limb of larger fold and direction of plunge of axis.

### FAULTS

THRUST
exposed
approximate
covered
T overthrust side

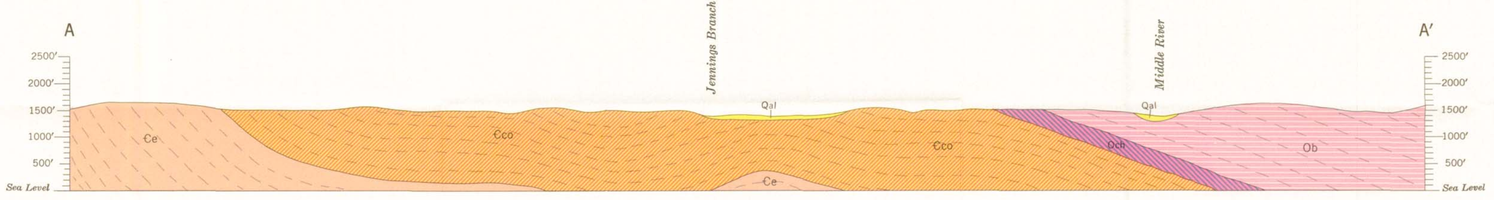
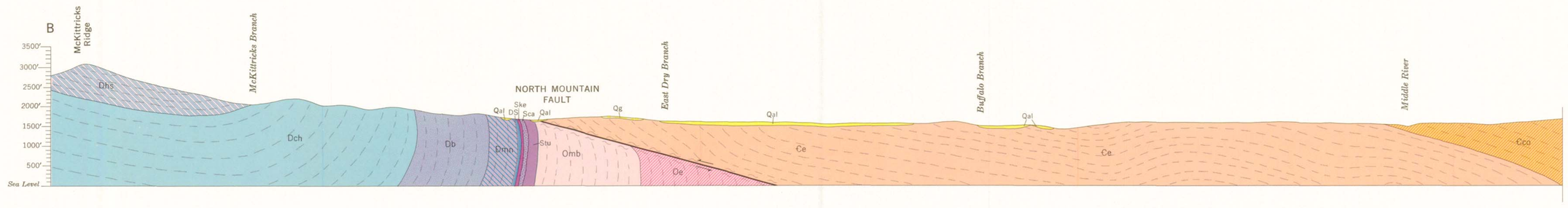
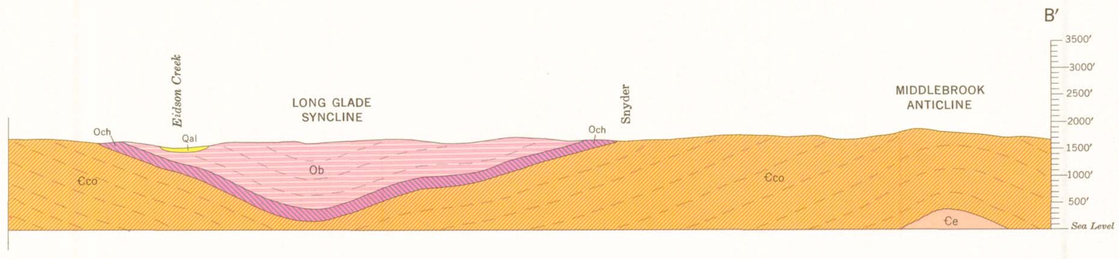
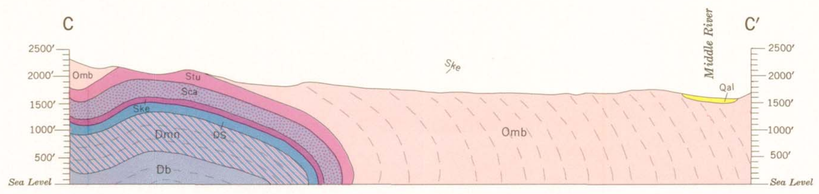
TRANSVERSE
approximate
covered
Arrows indicate relative movement

### ATTITUDE OF ROCKS

Strike and dip of beds
Strike and dip of overturned beds
Strike of vertical beds
Horizontal beds

### QUARRIES AND MINES

ABANDONED QUARRY OR MINE
13. Iron-ore mine
14. Iron-ore mine
15. Iron-ore mine
16. Crushed-stone quarry
17. Crushed-stone quarry
18. Crushed-stone quarry
19. Lime quarry

### SAMPLE LOCATIONS

R-3065 Locations of samples representative of various lithologies mapped.
F-690 Locations of fossils collected.