

EXPLANATION

MESOZOIC AND CENOZOIC

Rocks of Cenozoic and Mesozoic age, undifferentiated, and the Kaibab Limestone of the Aubrey Group of Paleozoic age

PALEOZOIC

Toroweap Formation, Coconino Sandstone, and Hermit Shale of Permian age, and Supai Formation of the Aubrey Group of Permian and Pennsylvanian age

Redwall Limestone of Mississippian age, Temple Butte Limestone of Devonian age, and Tonto Group of Cambrian age; the Tonto consists, in descending order, of the Muav Limestone, Bright Angel Shale, and Tapeats Sandstone

PRECAMBRIAN

Grand Canyon Supergroup

X
Travertine and talus cemented by travertine

— Contact

- - - Fault
Dashed where inferred. U, upthrown side; D, downthrown side

← Anticline
Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located

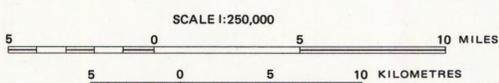
← Syncline
Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located

← Monocline
Composed of an anticlinal bend and a synclinal bend, dashed where approximately located

← General direction of ground-water movement toward springs in canyon of Little Colorado River and Marble Canyon

● GC-47
Spring and number

Base from U.S. Geological Survey
Marble Canyon 1954-62 and Hagstaff 1954-62



Geology modified from Maxson 1967
and Cooley and others 1969;
Hydrology by M. E. Cooley
1967-68

MAP SHOWING GENERALIZED OUTCROPS AND LOCATION OF SPRINGS
DISCHARGING FROM THE PRE-PENNSYLVANIAN ROCKS, SOUTHWESTERN
PART OF THE NAVAJO INDIAN RESERVATION, ARIZONA