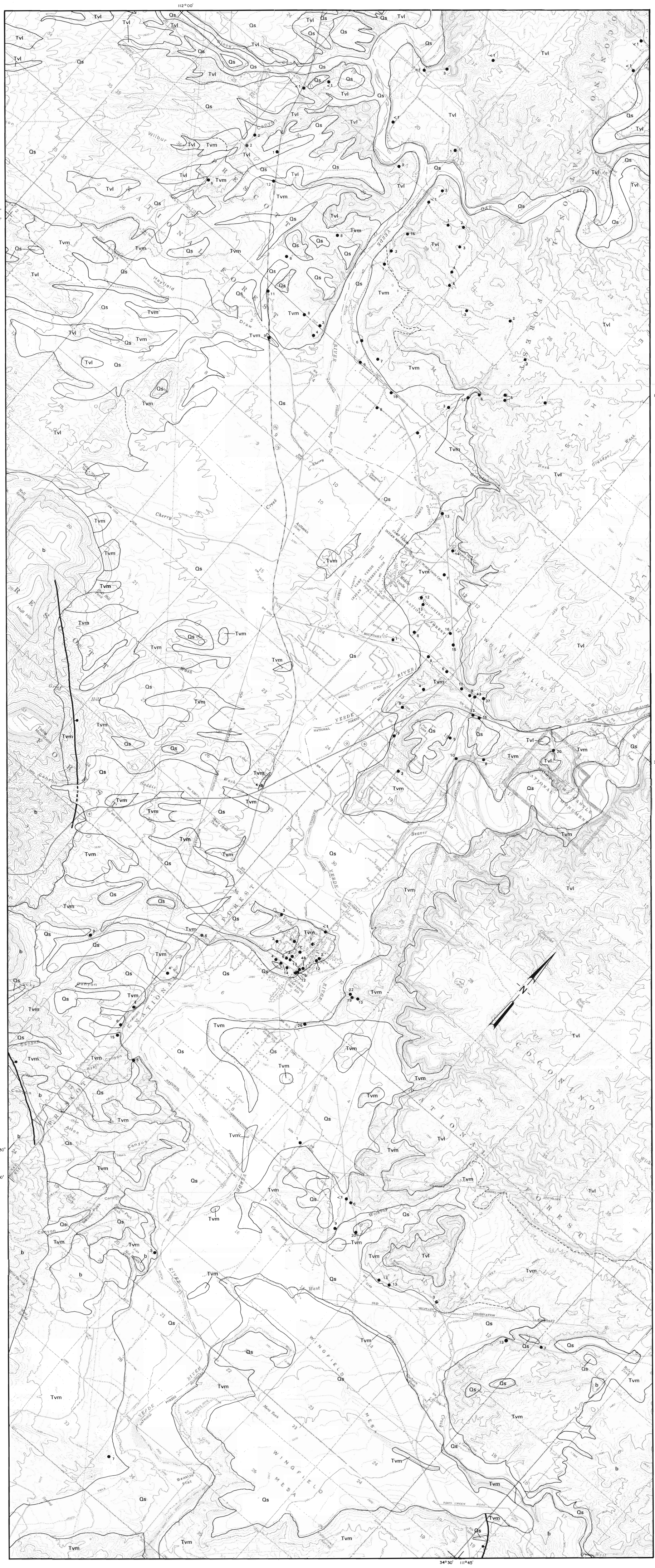


Geology and Uranium Concentrations in Verde Valley, Yavapai County, Arizona

John T. Duncan and Jon E. Spencer

1993

Arizona Geological Survey
Scale 1:32,000

1 .5 0 1 MILE

in Spencer, J.E., ed., 1993, Radon in Arizona: Arizona Geological Survey Bulletin 199, 96 p., 2 sheets, scale 1:32,000 and 1:1,000,000.

EXPLANATION

Map Units

Qs Surficial deposits (Quaternary)

Tvl Verde Formation, limestone unit (Pliocene). Upper part of Verde Formation; consists of hard, white to gray to pink, thin- to medium-bedded, variably cherty and dolomitic limestone. Includes soft, white to gray marl and carbonate mudstone, friable pink siltstone and sandstone, and minor amounts of conglomerate.

Tvm Verde Formation, mudstone unit (Miocene-Pliocene). Lower part of Verde Formation; consists of soft, gray to olive-green mudstone and white to gray marl and carbonate mudstone. Includes evaporite deposits of gypsum, halite, and sodium sulfate minerals; tuffs and tuffaceous sedimentary rocks; hard white limestone; and minor amounts of coarse clastic rocks.

b Bedrock. Pre-Verde Formation rocks including Proterozoic crystalline, Paleozoic sedimentary, and Tertiary volcanic rocks. Includes some volcanic rocks that may be same age as Verde Formation.

Map Symbols

Depositional contact; dashed where approximate

Fault, with bar and ball on downthrown side

Sample location with uranium concentration in parts per million

Sources of Geologic Data

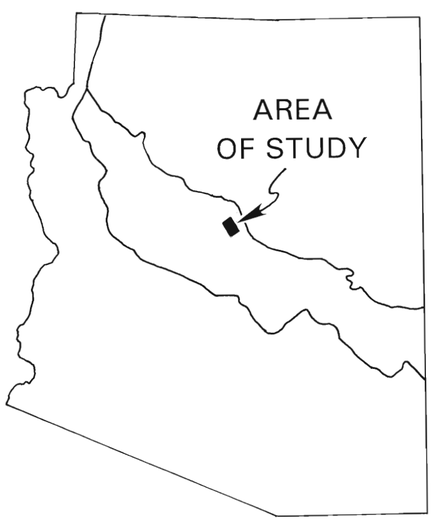
Billingsley, G.H., Conway, C.M., and Beard, L.S., 1988, Geologic map of the Prescott 30- x 60-minute quadrangle, Arizona: U.S. Geological Survey Open-File Report 88-372, 8 p., scale 1:100,000.

Wadell, J.S., 1972, Sedimentation and stratigraphy of the Verde Formation (Pliocene), Yavapai County, Arizona: Tempe, Arizona State University, M.S. thesis, 110 p., 2 sheets, scale 1:62,500.

Weir, G.W., Ulrich, G.E., and Nealey, L.D., 1989, Geologic map of the Sedona 30' x 60' quadrangle, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Miscellaneous Investigations Series Map I-1896, scale 1:100,000.

This plate supersedes Plate 1 in the following report: Duncan, J.T., and Spencer, J.E., 1991, Uranium-bearing rocks in Verde Valley, Yavapai County, Arizona, and implications for indoor radon gas: Arizona Geological Survey Open-File Report 91-3, 11 p., 2 sheets, scale 1:32,000.

Base map from U.S. Geological Survey 7.5-minute topographic quadrangles: Camp Verde, Clarkdale, Cornville, Cottonwood, Horner Mtn., Lake Montezuma, Middle Verde, and Page Springs. Contour intervals: 20 and 40 feet.

Acknowledgments

The research presented in this report was supported by the Arizona Radiation Regulatory Agency with funds provided by the U.S. Environmental Protection Agency.