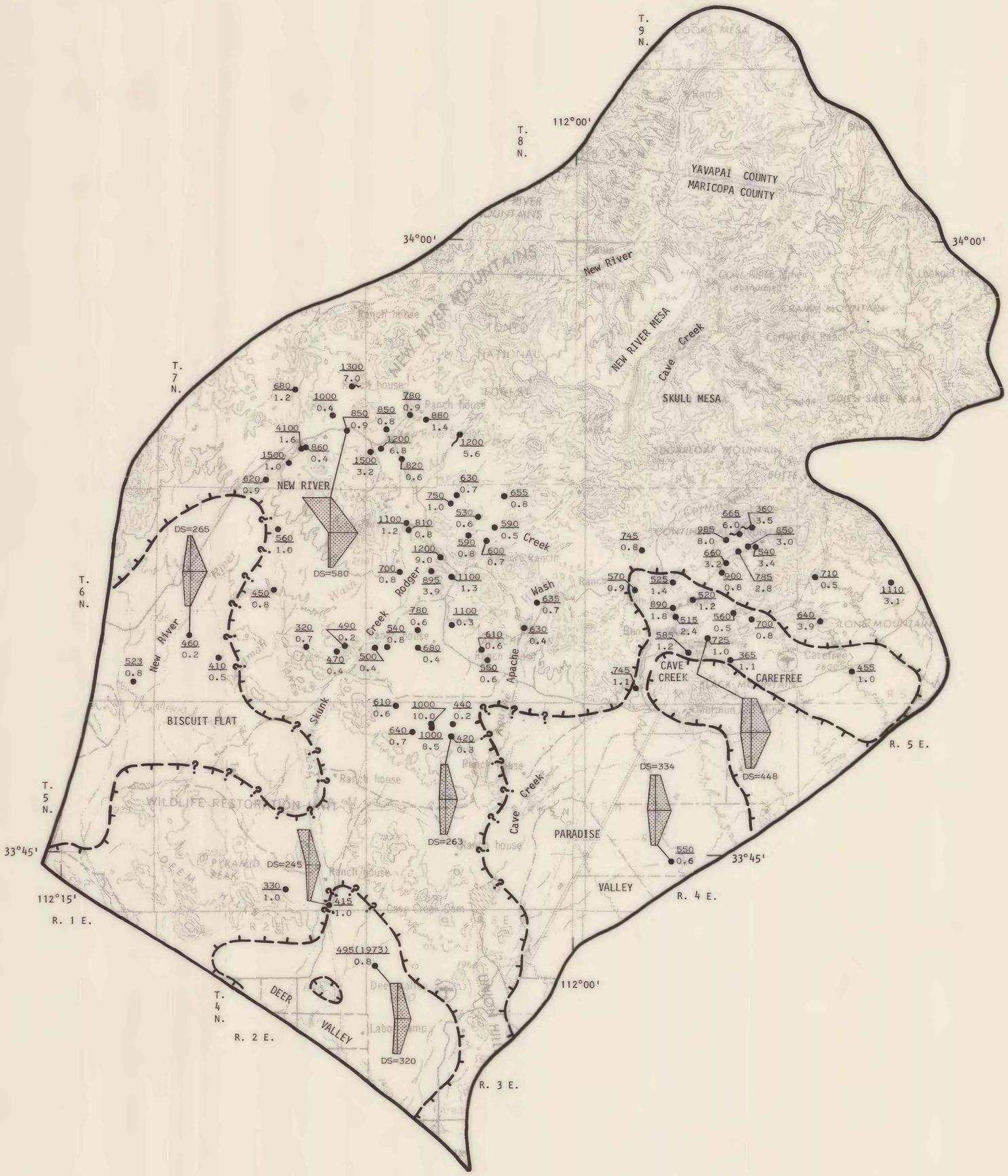


In the New River-Cave Creek area the ground water generally is of good chemical quality. The specific-conductance values shown on the map indicate that the dissolved-solids concentrations range from about 200 to 2,800 mg/L (milligrams per liter); the dissolved-solids values may be estimated by multiplying the specific conductance by 0.6, which is the approximate ratio of the dissolved solids to specific conductance. Only the water from a well in sec. 26, T. 7 N., R. 2 E., contains more than 1,000 mg/L dissolved solids, and most samples contain less than 500 mg/L. The recommended maximum contaminant level for dissolved solids in public water supplies is 500 mg/L, as proposed in the secondary drinking-water regulations of the U.S. Environmental Protection Agency (1977, p. 17146) in accordance with provisions of the Safe Drinking Water Act (Public Law 93-523).

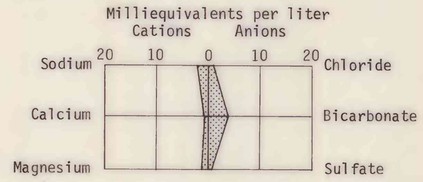
The maximum contaminant level for fluoride in public water supplies differs according to the annual average maximum daily air temperature (Bureau of Water Quality Control, 1978, p. 6). The amount of water consumed by humans, and, therefore, the amount of fluoride ingested depends partly on air temperature. In the New River-Cave Creek area the annual average maximum daily air temperature is about 82°F, and the maximum contaminant level for fluoride is 1.4 mg/L. The fluoride concentrations in the water from several wells and springs exceed this amount. In the New River area the water from a well near Rodger Creek in sec. 9, T. 6 N., R. 3 E., contains 9.0 mg/L fluoride. South and east of Skunk Creek, the water from two wells in sec. 5, T. 5 N., R. 3 E., contains fluoride concentrations of 8.5 and 10.0 mg/L; however, most of the water contains less than 1.0 mg/L. North of the town of Cave Creek, the water from a well in sec. 10, T. 6 N., R. 4 E., contains 8.0 mg/L fluoride, and water from several other wells and springs also contains fluoride in excess of the maximum contaminant level.

EXPLANATION

● 495(1973) / 0.8 — WELL FROM WHICH A WATER SAMPLE WAS COLLECTED IN 1976-77—Upper number, 495, is specific conductance in micromhos per centimeter at 25°C [(1973), year in which sample was collected if other than 1976-77]; specific conductance is an indication of the dissolved-solids concentration in water. Lower number, 0.8, is fluoride concentration in milligrams per liter

1200 / 5.6 — SPRING FROM WHICH A WATER SAMPLE WAS COLLECTED IN 1976-77—Upper number, 1200, is specific conductance in micromhos per centimeter at 25°C; specific conductance is an indication of the dissolved-solids concentration in water. Lower number, 5.6, is fluoride concentration in milligrams per liter

CHEMICAL-QUALITY PATTERN DIAGRAM—Shows major chemical constituents in milliequivalents per liter. The patterns are in a variety of shapes and sizes, which provides a means of comparing, correlating, and characterizing similar or dissimilar types of water



DS=320 — DISSOLVED SOLIDS—Number, 320, is dissolved solids in milligrams per liter

APPROXIMATE BOUNDARY OF THE MAIN WATER-BEARING UNIT—The main water-bearing unit consists of unconsolidated to semiconsolidated silt, sand, and gravel. Minor water-bearing units consist of conglomerate; interbedded basalt flows; rhyolitic to basaltic volcanic rocks; and schist, gneiss, and granite. Queried where uncertain

ARBITRARY BOUNDARY OF GROUND-WATER AREA

BASE FROM U.S. GEOLOGICAL SURVEY
PHOENIX 1:250,000, 1954,
MESA 1:250,000, 1954,
PRESCOTT 1:250,000, 1954, AND
HOLBROOK 1:250,000, 1954

SPECIFIC CONDUCTANCE AND FLUORIDE CONCENTRATION

MAPS SHOWING GROUND-WATER CONDITIONS IN THE NEW RIVER-CAVE CREEK AREA,
MARICOPA AND YAVAPAI COUNTIES, ARIZONA—1977

By

G. R. Littin