

Index map showing extent of the Edwards aquifer

REFERENCES CITED

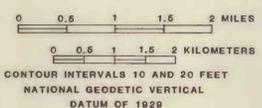
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BACKGROUND AND METHODOLOGY

This report, prepared in cooperation with the City of Austin, delineates the outcrop of the Edwards aquifer that is hydrologically associated with Barton Springs. The Edwards is a regional aquifer system in central Texas that extends in a narrow belt from Kinney County to Bell County (index map) and lies within an area locally known as the Balcones fault zone. Hydrologic boundaries separate the Edwards aquifer into several parts. Barton Springs is the major discharge point of the part of the Edwards aquifer in the Austin area (southern Travis and northern Hays Counties).

The Edwards aquifer hydrologically associated with Barton Springs consists of limestone of Early Cretaceous age, the Georgetown Limestone and underlying Edwards Limestone--about 155 square miles west and southwest of Austin (Andrews and others, 1984, p. 2). In this area, the aquifer dips outward to the southeast and is vertically displaced by numerous faults contained in the Balcones fault zone. In the Austin area, the Mount Bonnell fault is a major local component of the Balcones fault zone. The part of the Edwards aquifer described in this report is bounded on the north by the Colorado River (Town Lake and Lake Austin), on the south by the surface drainage divide between the Union Creek and the Blanco River watersheds, on the west by the updip limit of the Edwards Limestone, and on the east by the downdip limit of freshwater (concentration of dissolved solids less than 1,000 milligrams per liter), locally known as the "bad-water" line.

The outcrop of the Edwards aquifer in the Austin area is a narrow belt about 20 miles long and 4 miles wide--about 85 square miles. The outcrop area mapped is bounded on the north and south by the hydrologic boundaries of the Edwards aquifer mentioned above. The western boundary of the outcrop is the westernmost contiguous occurrence (excluding outliers) of the Edwards Limestone and commonly coincides with the Mount Bonnell fault and other associated faults. The eastern boundary of the outcrop marks the depositional contact or fault contact between the Georgetown or Edwards Limestones and younger rocks. The western and eastern boundaries of the aquifer outcrop were determined by: (1) geologic mapping; (2) interpreting aerial photographs; or (3) field verification of existing geologic maps by DeCook (1960), Rodda and others (1970), Barnes (1974), Garner and Young (1976), and Smith (1978). Where not field verified, the boundary is shown as inferred.



EXPLANATION

- BOUNDARY OF EDWARDS AQUIFER-- (From Andrews and others, 1984)
- - - - - OUTCROP OF EDWARDS AQUIFER HYDROLOGICALLY ASSOCIATED WITH BARTON SPRINGS--Dashed where inferred

Base from U.S. Geological Survey, 1:24,000 quadrangle maps:  
Austin West, 1952 (Photorevised 1973), Driftwood, 1958, Signal Hill, 1967 (Photorevised 1973), Mountain City, 1967 (Photorevised 1973), Oak Hill, 1954 (Photorevised 1973), and Buda, 1967 (Photorevised 1973)

DELINEATION OF THE OUTCROP OF THE EDWARDS AQUIFER HYDROLOGICALLY ASSOCIATED WITH BARTON SPRINGS IN THE AUSTIN AREA, TEXAS

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