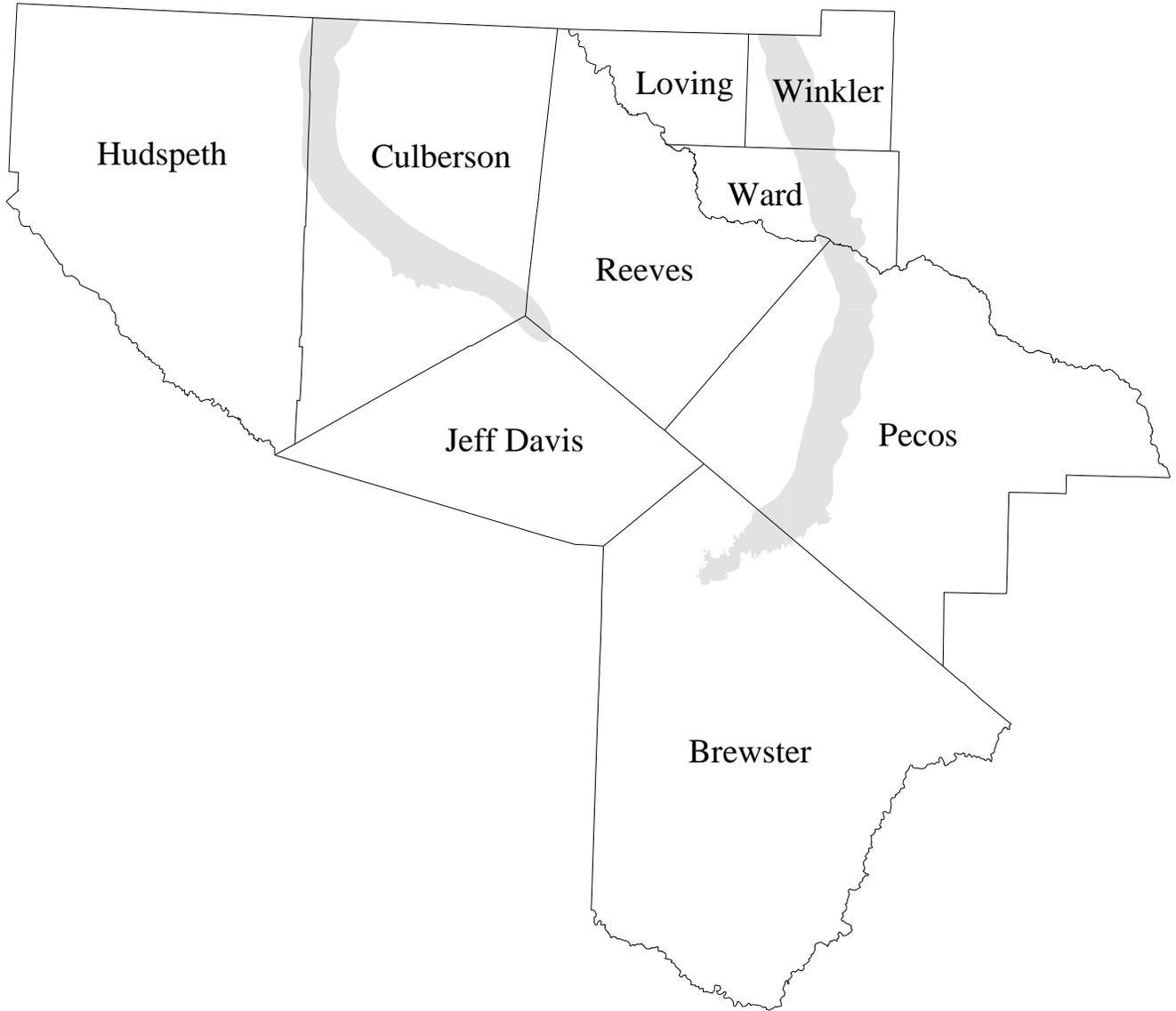


Capitan Reef Complex



Capitan Reef Complex Aquifer

The Capitan Reef formed along the margins of the Delaware Basin, an embayment covered by a shallow Permian sea. In Texas, two arcuate strips of the reef, 10 to 14 miles wide, are exposed in the Guadalupe, Apache, and Glass mountains; elsewhere, the reef is in the subsurface. The reef extends northward into New Mexico where it provides abundant fresh water to the city of Carlsbad.

Most of the ground water pumped from the aquifer in Texas is used for oil reservoir water-flooding operations in Ward and Winkler counties. A small amount is used for irrigation of salt-tolerant crops in Pecos and Culberson counties.

In Texas, the aquifer is composed of up to 2,360 feet of dolomite and limestone deposited as reef, fore-reef, and back-reef facies. Water-bearing formations include the Capitan Limestone, Goat Seep Limestone, and most of the Carlsbad facies of the Artesia Group—including the Grayburg, Queen, Seven Rivers, Yates, and Tansill formations.

The aquifer generally contains water of poor quality and yields small to large quantities of moderately saline to brine water. Water of the freshest quality is located on and near areas of recharge where the reef is exposed at the surface in the three mountain ranges.

References

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