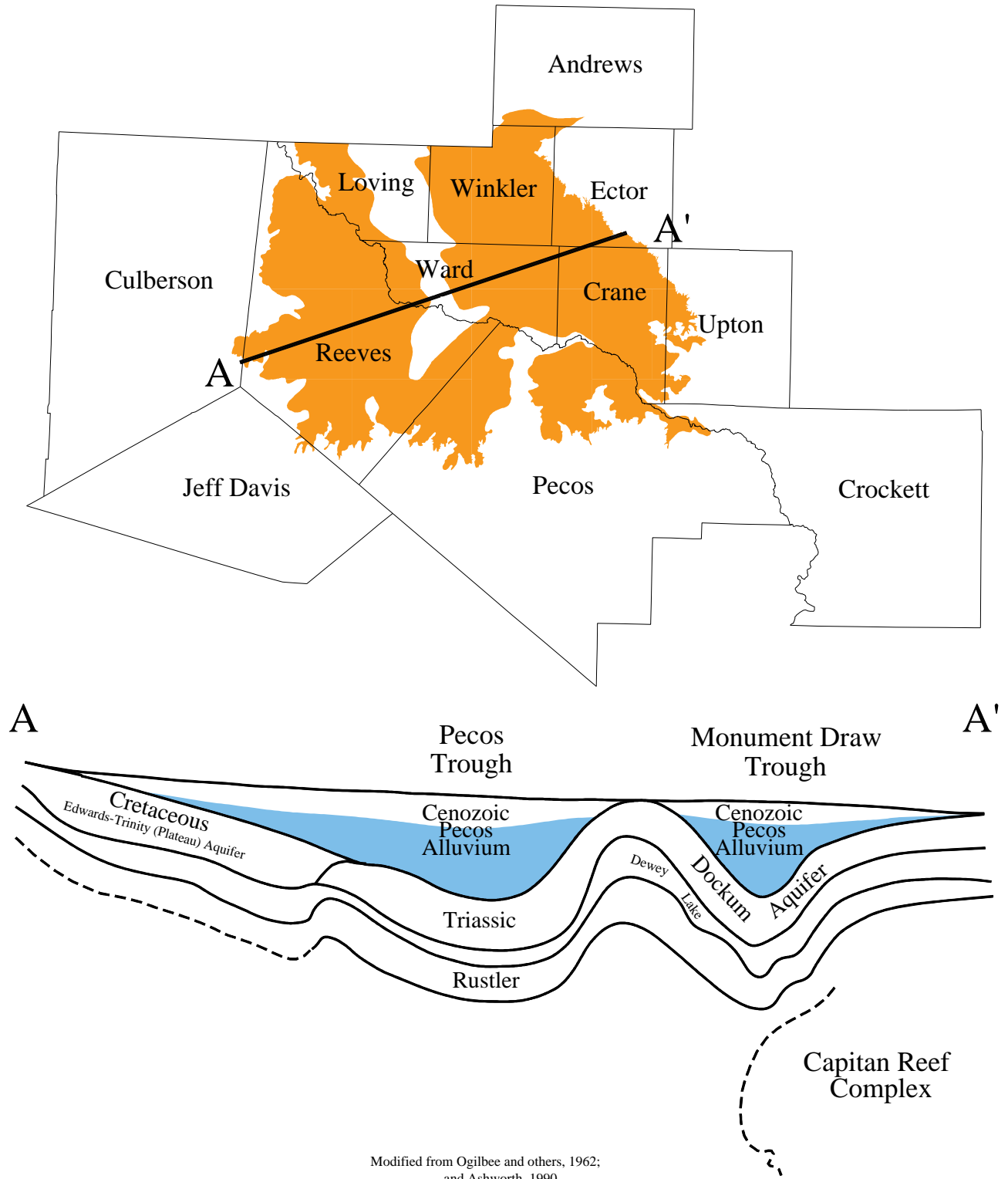


Cenozoic Pecos Alluvium



Modified from Ogilbee and others, 1962;
and Ashworth, 1990

Cenozoic Pecos Alluvium Aquifer

The Cenozoic Pecos Alluvium aquifer, located in the upper part of the Pecos River Valley of West Texas, provides water to parts of Andrews, Crane, Ector, Loving, Pecos, Reeves, Upton, Ward, and Winkler counties. The aquifer is the principal source of water for irrigation in Reeves and northwestern Pecos counties, and for industrial, power generation, and public supply uses elsewhere. A significant amount of water is exported to cities east of the area. Approximately 81 percent of the water pumped from the aquifer is used for irrigation.

The Cenozoic Pecos Alluvium of Quaternary age consists of up to 1,500 feet of alluvial fill and occupies two hydrologically separate basins: the Pecos Trough in the west and the Monument Draw Trough in the east. The aquifer is hydrologically connected to underlying water-bearing strata, including the Edwards-Trinity in Pecos and Reeves counties and the Triassic Dockum in Ward and Winkler counties.

Ground water in the Cenozoic Pecos Alluvium aquifer occurs under semiconfined or unconfined (water-table) conditions, although confining clay beds may create localized artesian conditions. Moderate to large yields can generally be expected from wells completed in this aquifer.

The chemical quality of water in the aquifer is highly variable, differing naturally with location and depth, and is generally better in the Monument Draw Trough. Water from the aquifer is typically hard and contains dissolved-solids concentrations ranging from less than 300 mg/l to more than 5,000 mg/l. Sulfate and chloride are the two predominant constituents. A natural deterioration of quality occurs with increasing depth of the water-bearing strata. Some quality deterioration has resulted from past petroleum industry activities in Loving, Ward, and Winkler counties, and from irrigation in Pecos, Reeves, and Ward counties.

Water-level declines in excess of 200 feet historically have occurred in south-central Reeves and northwest Pecos counties, but have moderated since the mid-1970s with the decrease in irrigation pumpage. Ground water that once rose to the surface and flowed into the Pecos River, now flows in the subsurface toward areas of heavy pumpage. As a consequence, baseflow to the Pecos River has declined. Elsewhere, only moderate water-level declines have occurred as a result of less intense pumpage for industrial and public supply uses in Ward and Winkler counties.

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