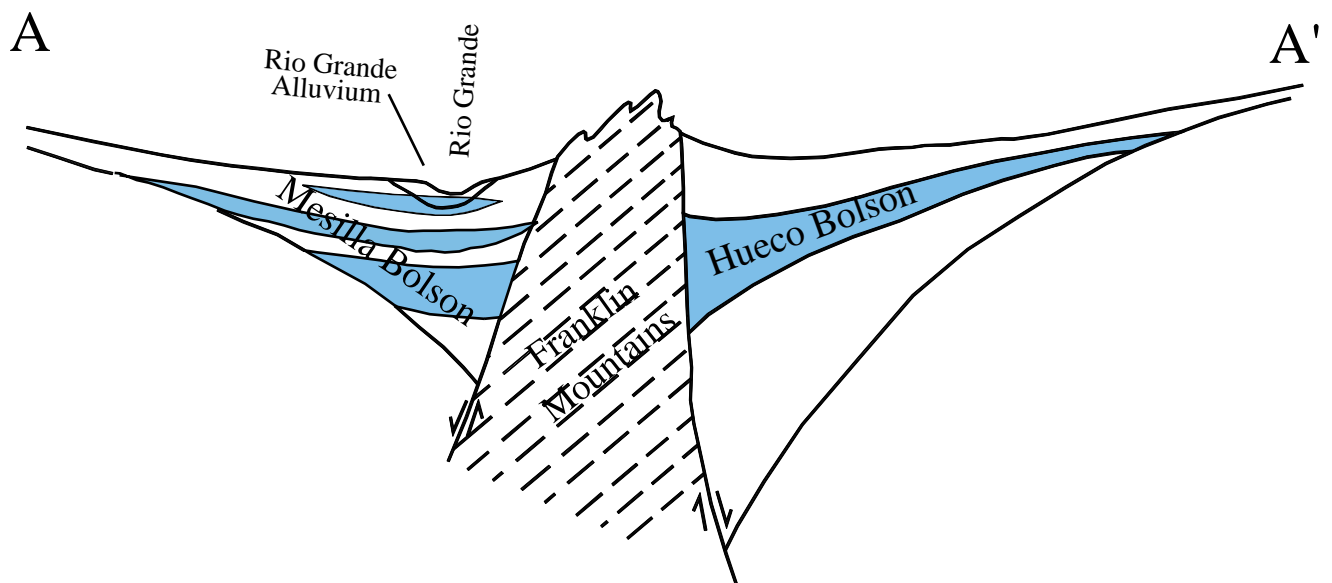
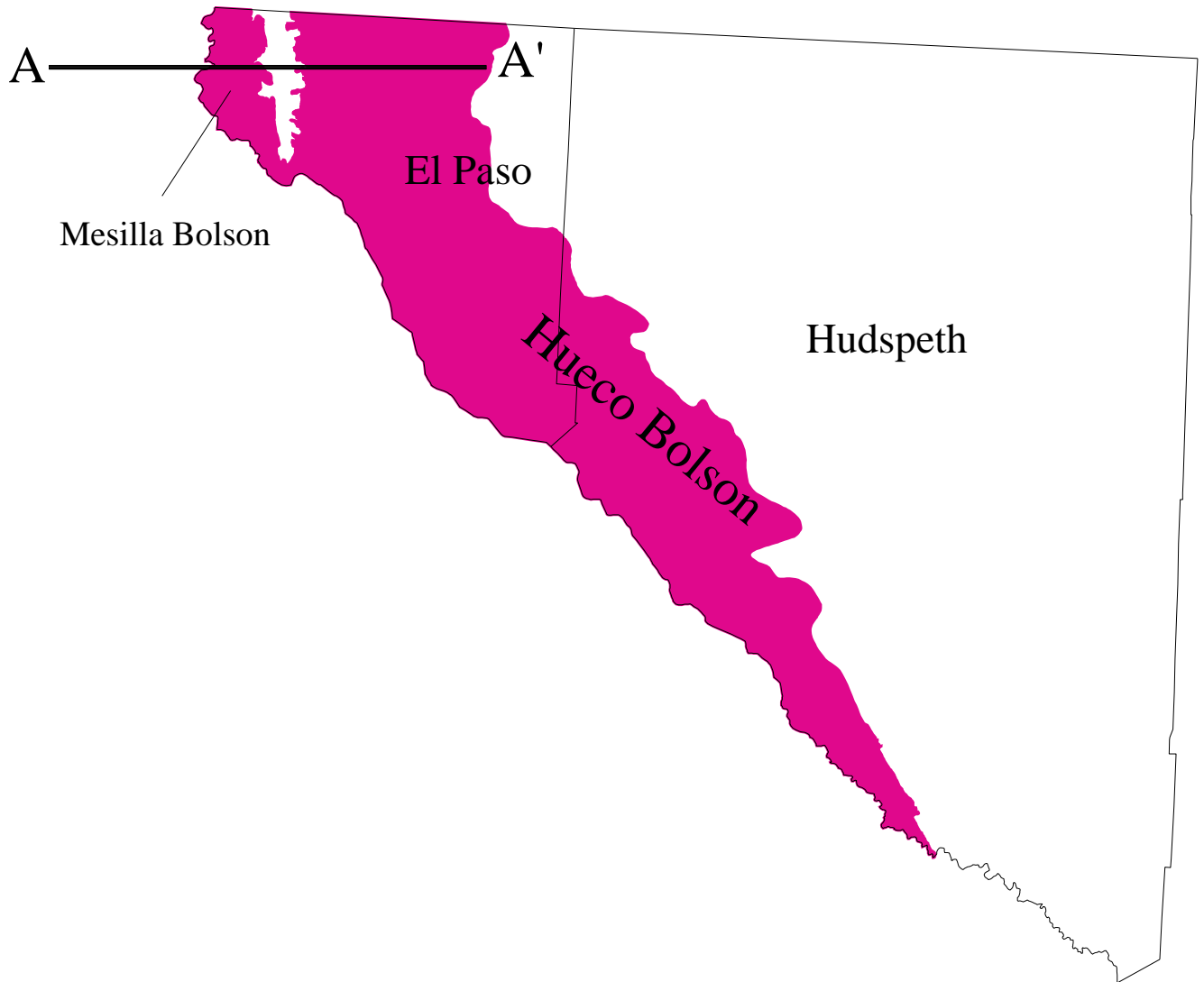


Hueco-Mesilla Bolson



Hueco-Mesilla Bolson Aquifers

The Hueco and Mesilla Bolson aquifers are located in El Paso and Hudspeth counties in the far western tip of Texas. The aquifers are composed of Tertiary and Quaternary basin-fill (bolson) deposits that extend northward into New Mexico and westward into Mexico. The Hueco Bolson, east of the Franklin Mountains, is the principal aquifer in the El Paso area; to the west is the Mesilla Bolson. Eighty-seven percent of the water pumped from the aquifers is used for municipal supply, primarily for the city of El Paso. Across the international border, water for Ciudad Juarez is supplied from the Hueco Bolson.

The Hueco Bolson, approximately 9,000 feet in total thickness, consists of silt, sand, and gravel in the upper part, and clay and silt in the lower part. Only the upper several hundred feet of the bolson contain fresh to slightly saline water. The majority of the Hueco water in Texas occurs in the El Paso metropolitan area; very little occurs in Hudspeth County.

The Mesilla Bolson consists of approximately 2,000 feet of clay, silt, sand, and gravel. Three water-bearing zones in the Mesilla (shallow, intermediate, and deep) have been identified based on water levels and quality. The shallow water-bearing zone includes the overlying Rio Grande Alluvium.

The chemical quality of the ground water in the Hueco Bolson differs according to its location and depth. Dissolved-solids concentrations in the upper, fresher part of the aquifer range from less than 500 mg/l to more than 1,500 mg/l and average about 640 mg/l. Quality of Hueco Bolson water in Mexico is slightly poorer.

Chemical quality of ground water in the Mesilla Bolson ranges from fresh to saline, with salinity generally increasing to the south along the valley. The water is commonly freshest in the deep zone of the aquifer and contains progressively higher concentrations of dissolved solids in the shallower zones. Increasing deterioration of quality of these aquifers is the result of large-scale ground-water withdrawals, which are depleting the aquifers of the freshest water.

Historical large-scale ground-water withdrawals, especially from municipal well fields in the downtown areas of El Paso and Ciudad Juarez, have caused major water-level declines. These declines, in turn, have significantly changed the direction of flow, rate of flow, and chemical quality of ground water in the aquifers. Declining water levels have also resulted in a minor amount of land-surface subsidence.

References

- Alvarez, H.J., and Buckner, A.W., 1980, Ground-water development in the El Paso region, Texas, with emphasis on the lower El Paso Valley: TDWR Rept. 246, 349 p.
- Ashworth, J.B., 1990, Evaluation of ground-water resources in El Paso County, Texas: TWDB Rept. 324, 25 p.
- White, D.E., 1987, Summary of hydrologic information in the El Paso, Texas, area, with emphasis on ground-water studies, 1903-80: TWDB Rept. 300, 75 p.