

Taos Valley Groundwater Structure

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The groundwater structure was calculated at top of the Servilleta basalt. Taos Valley is sourced from streams fed by mountain snowmelt. Recent watershed management actions, including forest thinning projects and deep drilling required by the Taos Pueblo Water Rights Settlement Agreement (“Abeyta Settlement”), can provide additional information to better understand Taos’ regional aquifer dynamics.

Geological structural data was compiled from water wells located by the Taos Soil and Water Conservation District (TSWCD) and NM Bureau of Geology and Mineral Resources (NMBGR). These data are herein plotted at 1:24,000 scale to allow well location by reference number using topographic maps. Drillers logs accurately depict hard basalt versus soft clastic formations. Structural cross-sections show lateral offsets by faults that frequently affect water levels. Warm, saline waters often rise along fault planes to precipitate minerals that seal the faults, noted first at hot springs in the county.

The origin of numerous north-south faults is pull-apart rifting of the Rio Grande Basin at top of Servilleta basalt dated at approximately 2 MYA. Obvious faults in the Los Cordovas outcrop system and continuing northwards are displayed intermittently at the surface across the Gorge Arch. Other faults occur eastwards under Taos but are buried deeper with less well control for basalt tops. The Gorge Arch continues northeast as an accommodation zone to El Salto. The lack of historic earthquakes suggests diminished faulting, although adobe houses may remain at risk. Faults continue to west of the Gorge Arch, including one under the gorge bridge. South near the Picuris front, young “flower” structures can be seen along the highway 68 “horseshoe” curve.

Recent deep well control data coupled with high resolution aeromagnetic surveys completed by TSWCD and USGS have enabled better definition of faulting and the compartmentalization of the deep aquifer. A 2500 foot well drilled by the Town of Taos in 2001 produces from the unconsolidated Ojo Caliente dune sand at Los Cordovas. Pressure drops during testing revealed nearby low permeability fault barriers. A new deep well is currently drilling 1 mile south of the from the producing well and will likely encounter a partially depleted reservoir.

Numerous studies have identified an associated problem with deep well water quality where some solutes can exceed EPA levels for drinking water. Arsenic, beryllium, fluoride, and uranium can occur in deep waters and require removal in a public water supply.

Taos SWCD has prepared community groundwater summaries that are now available to the public via their website, www.tswcd.org . These summaries show well control at 1:24,000 scale that allows well locations, water depth, faults, and chemistry to be illustrated for public interest.