

Geological Data
Fresh Water Aquifers
in area of
Gulf Oil Corporation's
Lea "ZD" State Well No. 1

The Lea "ZD" State Well No. 1 is located three miles north of the Mescalero Ridge which is the boundary between aquifers of different geologic ages.

South of the Mescalero Ridge are the Chinle and Santa Rosa (Triassic Age) aquifers. To the north, in the vicinity of the Lea "ZD" State Well No. 1, are the Ogallala (Tertiary Age) and occasional Quaternary channel and depression - filled aquifers. The more important aquifer is the Tertiary-Age Ogallala formation.

The Ogallala is a semi-consolidated fine-grained calcareous sand capped with a thick layer of caliche. It contains some clay, silt, and gravel. The base of this sand and the top of the Red-beds is at 200 feet by gamma-ray log measurement.

The Red-beds are un-differentiated Permian or Triassic Age and are composed of red shale and red silty sandstone. No wells are known to be bottomed in the Red-beds, but could probably yield very small quantities of high sulfate water (Ground-Water Report 6, U.S.G.S., 1961). The shale portions of the Red-beds retard the interchange of water between the evaporite-bearing rocks of the Permian and the overlying sandstone aquifers.