

EXPLANATION *for Fig. 5*

Sedimentary rocks

Qal

Alluvium

Gravel, sand, and silt averaging about 150 feet thick in the Pecos River lowland, but relatively thin in upland area. Yields large quantities of water to wells in lowland area. Poorly permeable to infiltrating surface water because of caliche in "B" horizon of soil. Artificial recharge potential good through recharge wells

Qb

Bolson deposits, dune sand, and other surficial deposits

Qta

Alluvium and caliche

Thin gravel, sand, silt, and caliche in upland area. May include some redeposited material from the Ogallala Formation. Nonwater-bearing in area. Artificial recharge potential negligible

Te Ti

Te, extrusive rocks

Ti, intrusive rocks

Artificial recharge potential negligible

Tka

Conglomerate, sandstone, siltstone, and shale

Yields small quantities of water to wells. Artificial recharge to these rocks does not reach the Roswell-Artesia sector

Pa

Artesia Formation

Includes rocks equivalent to: Tansill, Yates, Seven Rivers, Queen, and Grayburg Formations. Gypsum and anhydrite interbedded with sandstone, siltstone, and thin beds of dolomite. Supplies water to domestic, stock, and a few irrigation wells. Artificial recharge potential good in outcrop area, but poor where overlain by several feet of alluvium

Pq

Queen Formation

Dolomite interbedded with siltstone, sandstone, and gypsum. Yields small amounts of water to wells. Absorbs water readily in outcrop area, but artificial recharge to the formation, in large part, moves from the Roswell basin

Pg

Grayburg Formation

Thickly to thinly bedded dolomite interbedded with siltstone and fine-grained sandstone. Principal aquifer to irrigation wells south of Artesia. Artificial recharge potential good on outcrop area; however, water entering the upper aquifer moves eastward from the Roswell basin

Ps

San Andres Limestone

Thickly to thinly bedded limestone and dolomite interbedded with minor sandstone and siltstone beds in the lower part. Yields large quantities of water to irrigation wells and is the principal aquifer in the Roswell-Artesia sector. Artificial recharge potential poor in the western part where major drainages cut into Yeso Formation; good through wells tapping the San Andres between R. 23 E. and Pecos River; good through sinkholes and highly permeable sections of stream channels in Rs. 19 to 23 E., however most of the water entering the San Andres moves into the Hondo Sandstone Member and Yeso Formation. The Hondo Sandstone Member, ^{the lower part} of the San Andres Limestone ~~at the base~~, consists of quartzose sandstone and siltstone interbedded with silty limestone, gypsum, and anhydrite. Yields small quantities of water to stock and domestic wells west of R. 21 E. Artificial recharge directly into the Hondo not feasible; most recharge to the San Andres in Rs. 19 to 23 E. reaches the Hondo

Py

Yeso Formation

Anhydrite and gypsum interbedded with sandstone, siltstone, and thin beds of dolomite. Wells that penetrate the Yeso generally are west of R. 21 E., and most yield less than 10 gpm. Artificial recharge potential on the outcrop area is poor; most of the recharge to the formation is through the San Andres from R. 23 E. westward

Contact. Dashed where gradational or indefinite

Fault

.....
Structural zone. A zone in which joints, faults, or flexures have a similar or parallel trend

Pleistocene and Recent
Pliocene and Pleistocene

QUATERNARY
TERTIARY AND QUATERNARY
TERTIARY
TRIASSIC, CRETACEOUS, AND TERTIARY

Guadalupe

Artesia Group

PERMIAN

Leonard