

- Qac** Colluvium and alluvium, undivided (Holocene to middle? Pleistocene) – Poorly sorted, poorly consolidated mixture of sand, silt, and angular gravel derived from mass-movement slope processes and rain-wash. Commonly mixed with eolian sand and silt.
- Ql** Landslide deposits (upper to lower? Pleistocene) – Poorly consolidated, very poorly sorted fine- to very coarse-grained deposits formed by mass movement processes on steep slopes.

SEDIMENTARY UNITS

Santa Fe Group – Pliocene units

[Pliocene units of the Santa Fe Group are largely coeval but differ in clast composition because these units were transported from distinct source areas; are typically interbedded where two occur together and contacts are inherently arbitrary at map scale]

- Tt** Tuerto Gravel (Pliocene) – Yellowish- to reddish-brown and light red, moderately consolidated pebble to cobble conglomerate and pebbly sandstone with scattered boulders, and some interbedded silty-muddy fine sandstone; matrix of conglomerate is mostly poorly sorted fine- to coarse-grained sandstone. Base of Tuerto is a sub-regional erosion surface (Ortiz pediment surface of Bryan, 1938; lower Ortiz surface of Stearns, 1979) that was cut across Tertiary, Mesozoic, and Paleozoic rocks in and around the Ortiz Mountains. Thickness variable, but typically 40 to 100 feet in little-eroded exposures. Unit is the Tuerto Gravel of Stearns (1953a).

Santa Fe Group – Pre-Pliocene units, Hagan Basin

- Tbh** Blackshare Formation (Miocene) – Pink to light-brown, fine- to coarse-grained, massive to thin-bedded sandstone with lenticular, discontinuous beds of granule to pebble conglomerate and reddish-brown mudstone. Thickness at least 1,800 feet, although top not defined (Black and others, 2000). Description based on Connell and Cather (2001) and Connell and others (2002).
- Tth** Tanos Formation (lower Miocene to upper Oligocene) – Sandstone, mudstone, and conglomerate that unconformably overlie the Espinaso Formation in the Hagan Basin. Lower conglomeratic subunit consists of hornfels and porphyry clasts eroded from Ortiz Mountains. Middle mudstone-dominated subunit contains freshwater limestone beds and probably accumulated in lake environment. Upper subunit marked by tabular fluvial sandstones, which grades into overlying Blackshare Formation. Thickness about 830 feet (250m) adjacent to Espinaso Ridge on west side of Hagan Basin; description based on Connell and Cather (2001) and Connell and others (2002).

PRE-MIOCENE SEDIMENTARY UNITS

- Te** Espinaso Formation (Oligocene and upper Eocene) – Gray and light-brown, andesitic-latic, tuffaceous sandstone, volcanoclastic conglomerate, and volcanic debris-flow deposits; includes some ash-flow tuff and ash- and pumice-flow deposits. Lower part is calc-alkaline and upper part is alkaline (Erskine and Smith, 1993). Deposited around volcanic vent complexes of the Ortiz Porphyry Belt. Thickness about 1,400 feet at Espinaso Ridge (Black and others, 2000).
- Tg** Galisteo Formation (Eocene) – Variegated yellow, white, and red cross-bedded arkosic sandstone and pebbly sandstone, red and green mudstone, and channel conglomerate. Pebbles and cobbles consist of quartzite, chert, limestone, granite, and sandstone eroded from Laramide fault-block uplifts and deposited in a northeast-trending basin. Thickness highly variable, but locally greater than 4,000 feet in drillholes (Cather, 1992).
- Tdt** Diamond Tail Formation (lower Eocene to upper(?) Paleocene) – Yellow, orange, and gray, medium- to coarse-grained arkose and subarkose, commonly cross-bedded; with variegated gray, purplish and maroon mudstone. Thickness about 450 feet but variable (Black and others, 2000). Unit defined by Lucas and others (1997).

MESOZOIC SEDIMENTARY UNITS

Mesaverde Group

- Kmv** Mesaverde Group, undivided (Upper Cretaceous) – Dark gray and olive-gray shale and light yellow and light brown sandstone; contains coal seams in upper part. Dominantly nonmarine strata. Thickness more than 1,000 feet; locally subdivided as follows: