

Geologic Map of the Carlsbad East Quadrangle, Eddy County, New Mexico

By

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**New Mexico Bureau of Geology and Mineral Resources
*Open-file Digital Geologic Map OF-GM 060***

Scale 1:24,000

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GEOLOGIC MAP OF THE CARLSBAD EAST 7.5-MINUTE QUADRANGLE, EDDY COUNTY, NEW MEXICO

by Kristie Diehl McLin
May, 2002

New Mexico Bureau of Geology and Mineral Resources
Open-file Geologic Map

Scale 1:24,000

This quadrangle map has been Open-filed in order to make it available. The map has not been reviewed according to New Mexico Bureau of Geology and Mineral Resources standards, and due to the ongoing nature of work in the area, revision of this map is likely. As such, dates of revision will be listed in the upper right corner of the map and on the accompanying report. **The contents of the report and map should not be considered final and complete until it is published by the NMBGMR.**

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DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS

Qal (Holocene) - Quaternary alluvium, current channel of the Pecos River and Lone Tree Draw, as well as Lake Avalon deposits. Consists of red to light brown silty sands, few clasts of well rounded limestones and chert. Limestone clasts are about 15 cm in size, and cherts are usually smaller, about 1-5 cm.

Qe (Holocene) - Quaternary eolian sands, coppice dunes consisting of fine to very fine grained red sands, well sorted and texturally mature quartz. Dunes are covered with thick vegetation consisting of tall shrubs and grasses.

Qvf (Holocene) - Quaternary valley fill, comprised of fine grained sand and silt washed off the slopes of the surrounding hillsides by runoff. Reddish brown, texturally mature sand grains, but only moderately sorted. Some eolian reworking of these fluvial deposits. Very few angular limestone clasts about 15 to 20 cm in size found beneath the surface.

Qss & Qss/Qt2 (Holocene) - Quaternary sand sheet, sometimes overlying Quaternary terrace approximately 2.5 meters above the current Pecos River channel. The Pecos River is currently incising into Qt2. Sand sheet lines the valleys of the Eastern quad, as well. Consists of thin coverings of red fine grained sand with some local accumulations of silt in the valleys. Fluvially reworked in some areas with some large angular clasts, up to 30 cm. Clasts are salt shattered limestone derived from local bedrock.

Qsc (Holocene/Pleistocene) - Quaternary sand covering caliche, modern red sand covers thick accumulations of moderately indurated calcium carbonate formed in ancient red eolian sand deposits, possibly pleistocene in age. Large salt shattered limestone clasts are present at the surface, and can be up to 40 cm. The ancient sand overlies a thin evaporite deposit over a thick well sorted dark red clay, probably a lake deposit.

Qf1b (Pleistocene) - Quaternary Dark Canyon fan, subangular locally derived clasts of limestone mixed with well rounded chert and limestone gravels of the ancient Pecos River floodplain on the Northeast bank of the Pecos River. Poorly sorted with subrounded sand matrix. Limestone clasts are larger, 15 to 20 cm, while cherts are small, 1-5 cm. Locally derived clasts dominate the deposit. A moderately indurated calcium carbonate has formed in this deposit.

Qf1a (Pleistocene) - Quaternary Hackberry Hills fan, angular limestone clasts derived from hills directly above the deposits. Matrix is a coarse subrounded sand, fining in the distal portion of the fan. Deposit is poorly sorted, and clasts are approximately 10 to 20 cm. Coalesced in most places, there is a noticeable break in slope at the edge of the fans. Well indurated calcium carbonate development.

Qt1 (Pleistocene) - Quaternary terrace, well rounded gravels of rhyolite, chert, quartzite, granite, and limestone. Limestone clasts are largest, 10 to 15 cm, while others are smaller 1-5 cm. Very well indurated calcium carbonate development with formation of pisoliths, up to two centimeters of calcium carbonate rind formed on gravels. Poorly sorted with coarse sand grains, tan colored. The upper soil horizons have eroded away and been replaced by light reddish brown fine grained eolian sand. Vegetation is sparse, consisting mainly of small shrubs 30 cm tall.