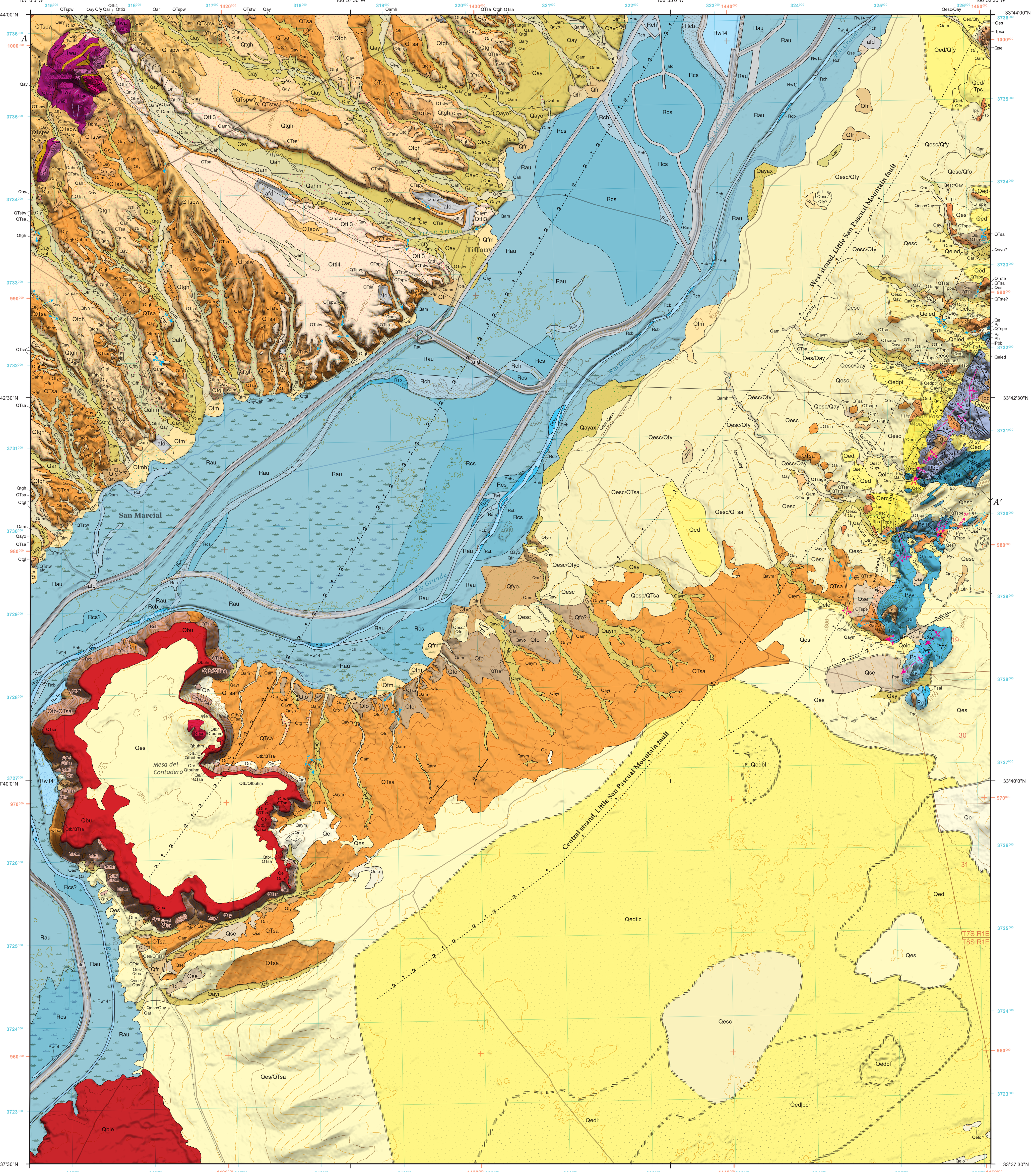


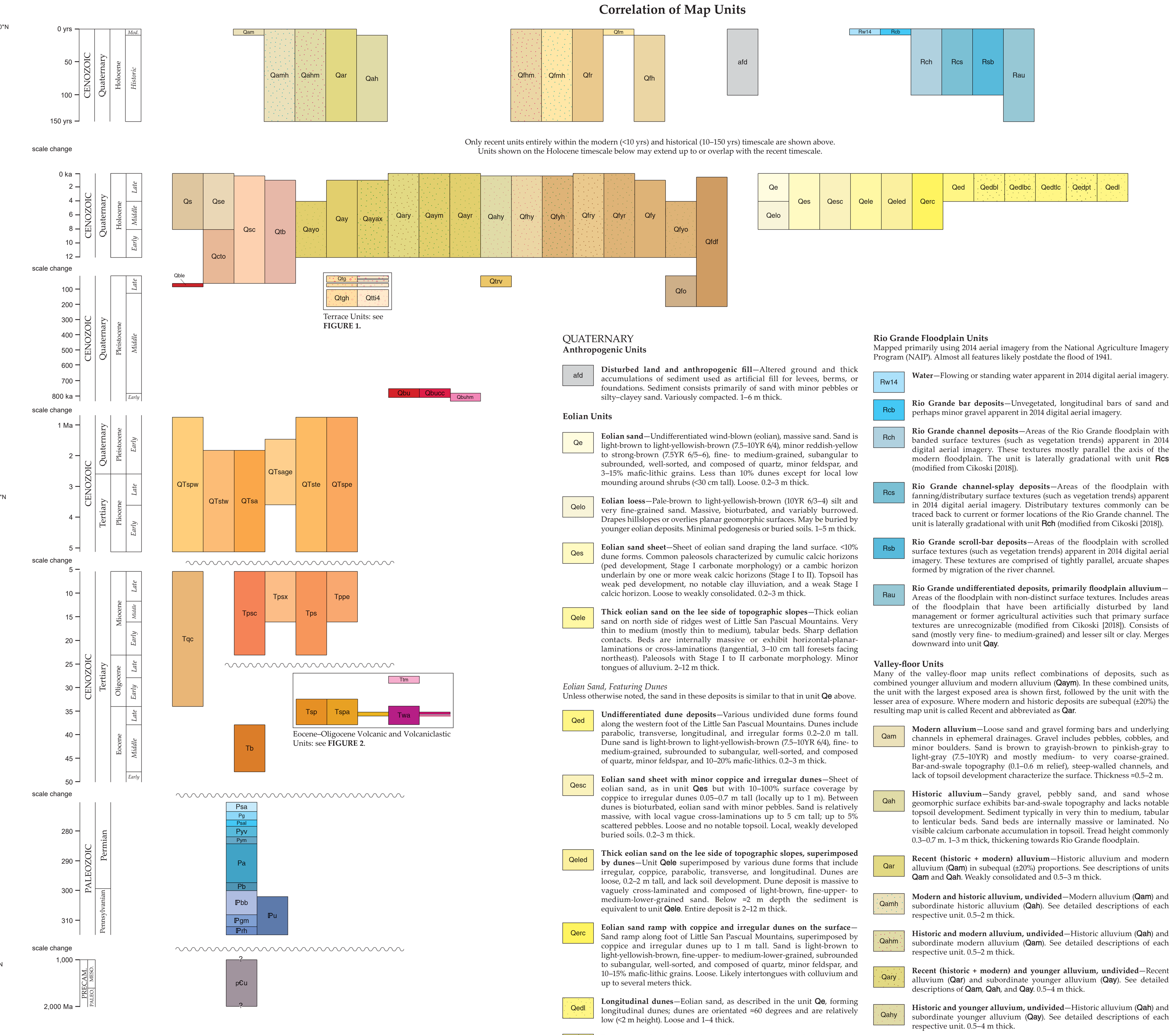
1:24,000

Contour Interval 20 Feet

North American Vertical Datum of 1988

Magnetic Declination
June 2018
8° 29' East
At Map Center

Correlation of Map Units



Only recent units entirely within the modern (<10 yrs) and historical (10–150 yrs) timescale are shown above. Units shown on the Holocene timescale below may extend up to or overlap with the recent timescale.

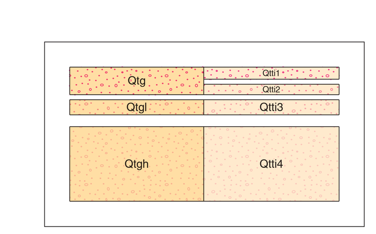


FIGURE 1—Close-up view of middle–late Quaternary age Terrace Units deposited along canyons west of the Rio Grande, shown at 1:9,000.

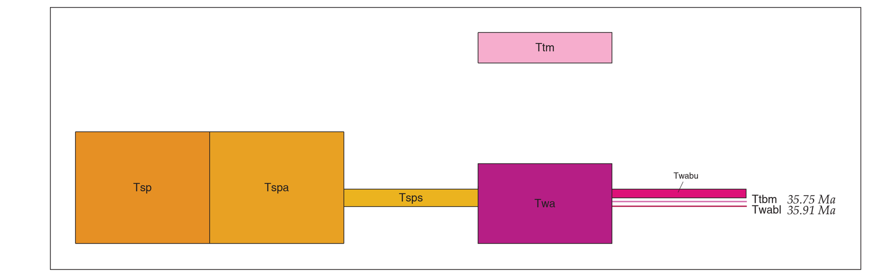


FIGURE 2—Close-up view of the Eocene–Oligocene Volcanic and Volcaniclastic Rocks, shown at 1:9,000.

Explanation of Map Symbols

Description of Map Units

PRECAMBRIAN

Precambrian rocks, undivided—Cross section only. Schist, amphibolite, felsic porphyry, and granite. Highly variable thicknesses of lithologic types. Protoliths for schist and amphibolite were arkosic sandstones and muddy siltstones, with minor interbedded volcanic flows; these were later intruded by granite (synthesized by Richard Chamberlin [in Chamberlin and Cikoski, 2010] from Kent [1982] and Bowring et al. [1983]).

References

Bowring, S.A., Kent, S.C., and Sumner, W., 1983, Geology and U-Pb Geochronology of Proterozoic Rocks in the vicinity of Socorro, New Mexico, New Mexico Geological Society, 34th Field Conference Guidebook, Socorro Region II, p. 137–142.

Cather, S.M., Chamberlin, R.M., and Ratte, J.C., 1994, Tertiary stratigraphy and nomenclature for western New Mexico and eastern Arizona: New Mexico Geological Society, 45th Annual Fall Field Conference Guidebook, Mogollon Slope, p. 259–266.

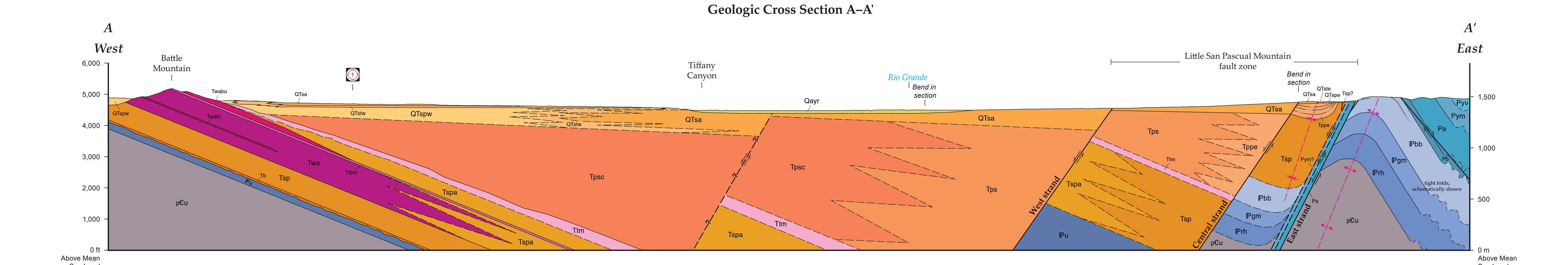
Chamberlin, R.M., and Cikoski, C.T., 2010, Geologic map of the Indian Well Wilderness Quadrangle, Socorro County, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-file Digital Geologic Map OF-GM 201, scale 1:24,000.

Kent, S.C., 1982, Geologic maps of Precambrian rocks in the Magdalena and Chupadera Mountains, Socorro County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 170, 3 sheets.

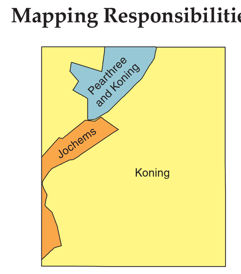
Lucas, S.G., Krainer, K., Allen, B.D., and Barrick, J.E., 2017, The Pennsylvanian section in the Little San Pascual Mountains, Socorro County, New Mexico, in Lucas, S.G., DiMichele, W.A., and Krainer, K., eds., Carboniferous-Permian Transition in Socorro County, New Mexico: New Mexico Museum of Natural History and Science Bulletin 77, p. 287–307.

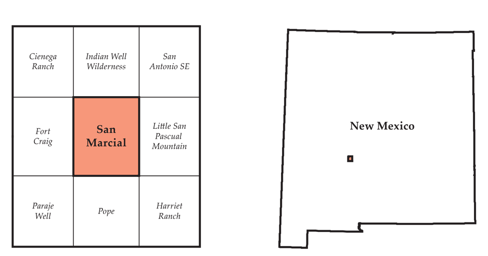
Pearce, J.T., and Kelson, K.I., 2004, Surficial geology of the middle Rio Grande valley floodplain, from San Acacia to Elephant Butte Reservoir, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-file Report 477, 19 p. Technical Memorandum and 2 ArcGIS shape files showing mapping from 1935 and 2001 aerial photography.

Geologic Cross Section A–A'



Mapping Responsibilities





Quadrangle Location

New Mexico Bureau of Geology and Mineral Resources
New Mexico Tech
801 Leroy Place
Socorro, New Mexico
87801-4796

[575] 835-5490

This and other STATEMAP quadrangles are available for free download in both PDF and ArcGIS formats at:

http://geoinfo.nmt.edu

Digital layout and cartography by the NMBGMR Map Production Group:
Phil L. Miller, Amy L. Dunn, Ann D. Knight, and Justine L. Nicolette

New Mexico Bureau of Geology and Mineral Resources
Open-File Geologic Map 287

Mapping of this quadrangle was funded by a matching-funds grant from the STATEMAP program of the National Cooperative Geologic Mapping Act (Fund Number: G19AC00226), administered by the U. S. Geological Survey and by the New Mexico Bureau of Geology and Mineral Resources (Dr. Nelia W. Dunbar, *Director and State Geologist*; Dr. J. Michael Timmons, *Assoc. Director for Mapping Programs*).

Geologic Map of the San Marcial 7.5-Minute Quadrangle, Socorro County, New Mexico

December 2020

by

Daniel J. Koning, Kristin S. Pearthree,
Andrew P. Jochems, and David W. Love

*New Mexico Bureau of Geology and Mineral Resources,
801 Leroy Place, Socorro, New Mexico, 87801*

Comments to Map Users

A geologic map displays information on the distribution, nature, orientation, and age relationships of rock and deposits and the occurrence of structural features. Geologic and fault contacts are irregular surfaces that form boundaries between different types or ages of units. Data depicted on this geologic quadrangle map may be based on any of the following: reconnaissance field geologic mapping, compilation of published and unpublished work, and photogeologic interpretation. Locations of contacts are not surveyed, but are plotted by interpretation of the position of a given contact onto a topographic base map; therefore, the accuracy of contact locations depends on the scale of mapping and the interpretation of the geologist(s). Any enlargement of this map could cause misunderstanding in the detail of mapping and may result in erroneous interpretations. Site-specific conditions should be verified by detailed surface mapping or subsurface exploration. Topographic and cultural changes may not be shown due to recent development.

Cross sections are constructed based upon the interpretations of the author made from geologic mapping and available geophysical and subsurface (drillhole) data. Cross sections should be used as an aid to understanding the general geologic framework of the map area and not be the sole source of information for use in locating or designing wells, buildings, roads, or other man-made structures.

The New Mexico Bureau of Geology and Mineral Resources created the Open-file Geologic Map Series to expedite dissemination of these geologic maps and map data to the public as rapidly as possible while allowing for map revision as geologists continued to work in map areas. Each map sheet carries the original date of publication below the map as well as the latest revision date in the upper right corner. In most cases, the original date of publication coincides with the date of the map product delivered to the National Cooperative Geologic Mapping Program (NCGMP) as part of New Mexico's STATEMAP agreement. While maps are produced, maintained, and updated in an ArcGIS geodatabase, at the time of the STATEMAP deliverable, each map goes through cartographic production and internal review prior to uploading to the Internet. Even if additional updates are carried out on the ArcGIS map data files, citations to these maps should reflect this original publication date and the original authors listed. The views and conclusions contained in these map documents are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of New Mexico, or the U.S. Government.