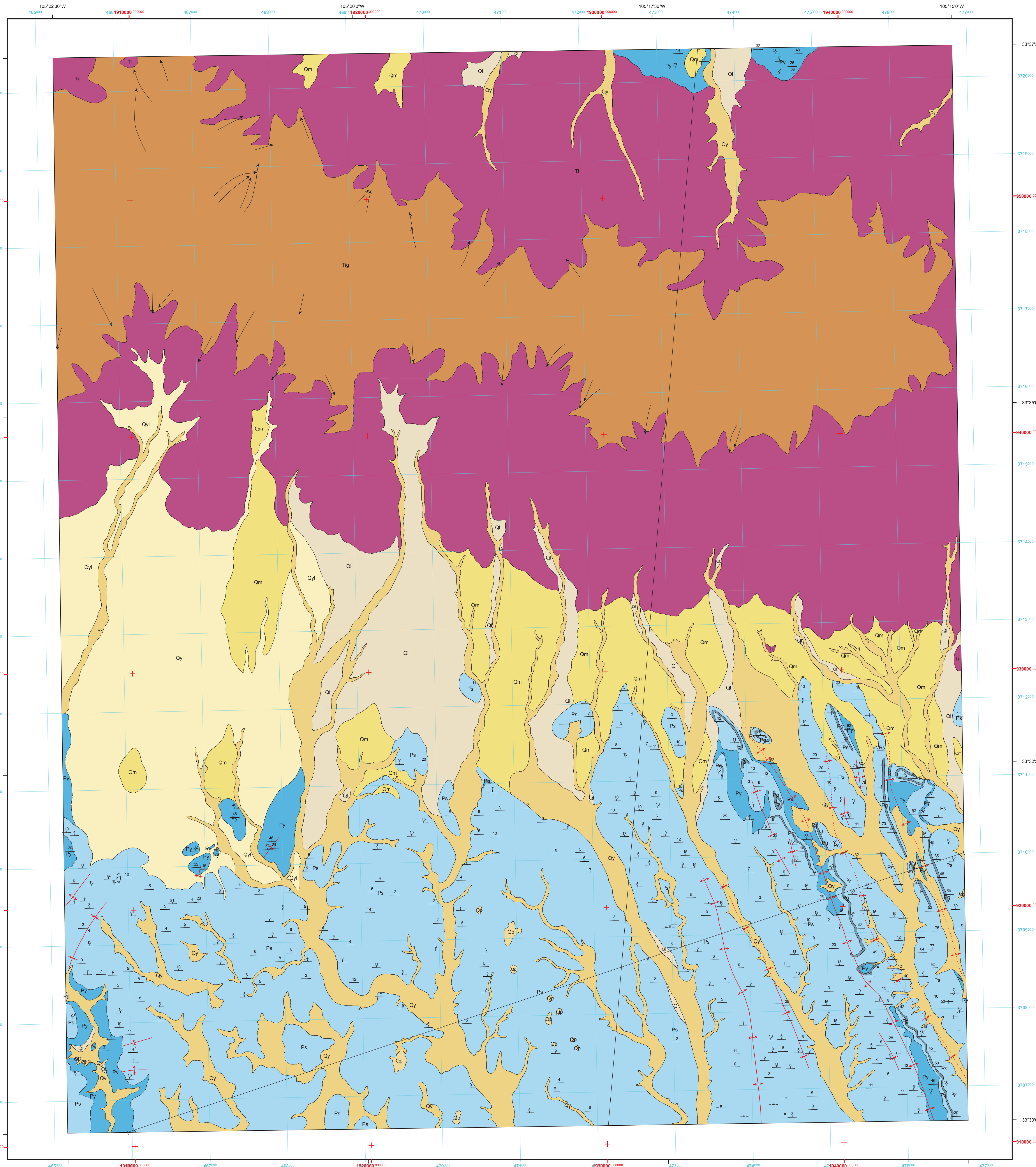
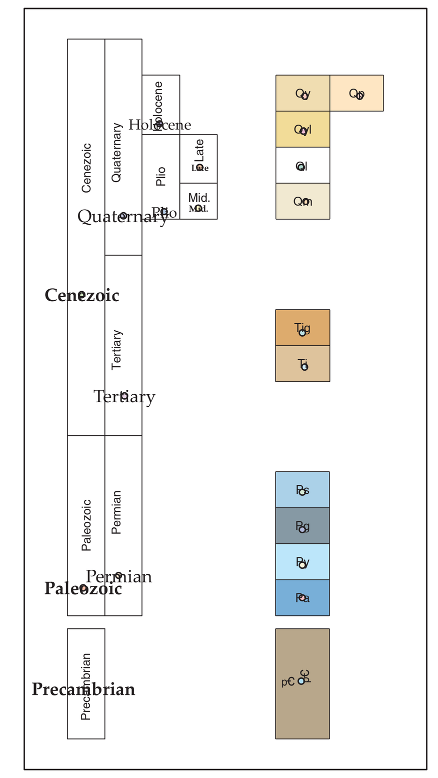
NMBGMR Open-File Geologic Map XXX

Last Modified June 2015





Symbol

01-01-02-02-00—Heading02—Mid—Middle—Middle Pleistocene

01-00-00-00-

01-01-00-00-00—Heading02—Quaternary Deposits—Quaternary Deposits—Quaternary Deposits

01-01-01-00-

01-01-01-02-00—Unit—Qy—Alluvial Deposits (Holocene)—These deposits were mapped separately from the remainder of the Quaternary surficial deposits because they are relatively easy to identify and are important because these are areas that may be prone to flooding. They are composed of weakly consolidated interbedded gravel, silt, and clay. They commonly form relatively flat deposits at the bottom of the wider drainages. They characteristically contain abundant dark brown, organic- and silt-rich soils at the surface. The deposits are commonly incised up to about 2-3 meters by the modern drainages, where vertical faces locally show older soil horizons. As mapped, this unit locally contains at least two and possibly three separate terrace levels.

01-01-01-03-00—Unit—Qp—Playa Deposits (Holocene)—Mostly weakly consolidated silt and clay. These fill depressions within the San Andres Formation in the southern part of the Capitan Peak quadrangle where they are interpreted to be sink holes that have filled with sediment. The presence of small seasonal ponds within some of them suggests that water does not infiltrate within them very quickly.

01-01-02-00-

01-01-02-01-00—Heading02—Late—Late—Late Pleistocene

01-01-02-01-01—Unit—Qyl—Alluvial Deposits, undivided (Holocene and Late Pleistocene)—Dominated by sand to boulders of fine-grained granite. As mapped, this unit contains both Late Pleistocene deposits with elevations about 10-30 feet above the level of the modern drainages. Holocene deposits form one or more terrace levels below the level of Ql deposits. The two ages are very difficult to distinguish on the broad alluvial apron on the south side of the Capitan Mountains.

01-01-02-01-02—Unit—Ql—Alluvial Deposits (Late Pleistocene)—These deposits consist of poorly sorted sand, gravel, and boulders of dominantly Ti. They are poorly exposed, but commonly form terrace remnants less than about 20 feet above the Qyl deposits

01-01-02-02-01—Unit—Qm—Alluvial Deposits (Middle Pleistocene)—Composed of poorly sorted subangular to subrounded pebbles to large boulders, the vast majority are composed of fine-grained granite (Ti). Some deposits contain a significant amount of angular to subrounded dark gray to black iron clasts (magnetite and hematite) from small pebbles up to about 40 cm across. Where Qm deposits have been significantly eroded the iron clasts locally form a lag placer. Although poorly exposed, these deposits locally contain a well developed horizon of laminar caliche. These deposits are higher in the landscape than Ql deposits have been dissected by deeper drainages. Commonly less than 40 feet thick.

01-02-00-00-00—Heading02—Tertiary Deposits—Tertiary Deposits—Tertiary Deposits

01-02-01-00-00—Unit—Tig—Fine-Grained Granite, Areas Subjected to Periglacial Activity—This unit contains the areas of the Capitan pluton that were subjected to glacial or periglacial processes. There is almost no intact outcrop, yet nearly all of the surface rubble is composed of fine-grained granite. As mapped, this unit also contains talus and rock glacier deposits which contain material that has moved down-slope. Since it was not practical with the time available to distinguish the different types of slope deposits, it made sense to lump them into this one unit

01-02-02-00-00—Unit—Ti—Fine-Grained Granite—Overall the mineralogy of this rock is very bland and non-descript. The rock is characteristically fine-grained and tan-colored, exhibiting phenocrysts of subhedral to euhedral K-feldspar up to about 4 mm across, and anhedral muscovite and/or biotite from 1-2 mm across. The rock commonly weathers a light rusty tan color and commonly exhibits either a smooth or slightly granular texture. Commonly forms large subangular to rounded boulders.

03-00-00-00-

03-01-00-00-00—Heading02—Permian rocks—Permian Rocks—Permian Rocks

03-01-02-00-00—Unit—Ps—San Andres Formation—Medium- to thick-bedded dolomite and limestone. Dolomite beds are typically light gray-colored, whereas limestone beds are commonly darker gray. Many beds contain sand-sized broken fossil debris surrounded by a matrix composed of micrite and more commonly microspar. Some beds contain faint, parallel laminae parallel to bedding. Other beds are massive and appear bioturbated. Orange-weathering chert is minor but widespread and is composed of granular microcrystalline quartz. The chert commonly forms irregularly shaped masses up to several tens of centimeters across that is both discordant and concordant to bedding. Common larger fossils include coiled gastropods up to about 5 cm across and less abundant nautiloids up to about 10 cm. Smaller recognizable fossils include crinoid stem segments, disarticulated brachiopods (commonly up to 2 cm and replaced by chert), and sparse fussilinids. The carbonate beds are interbedded with well sorted, fine- to medium-grained quartz sandstone from 1-10 meters thick, which probably represent intertonguing Glorietta Sandstone. Maximum thickness of the San Andres Formation is about 800 feet

03-01-03-00-00—Unit—Pg—Glorieta Sandstone—Well sorted, fine- to medium-grained quartz sandstone from 1-10 meters thick. The sandstone beds appear to occur within a few hundred feet of the base of the San Andres Formation. Sandstone beds typically weather light orange to brown and in most outcrops contain abundant calcite-cemented BB-size concretions up to 2-3 mm across. Maximum thickness is about 30 feet

03-01-04-00-00—Unit—Py—Yeso Formation—Interbedded fine-grained quartz sandstone, siltstone, dolomite, and bedded gypsum. Siltstone is commonly rusty red and pale yellow. Dolomite beds are locally fossiliferous and contain silicified brachiopod and crinoid fragments, abundant coiled gastropods, aminods, and possibly cephalopods. Dolomite beds locally contain moldic porosity with some pores still filled with gypsum. Gypsum beds are typically sub-horizontally banded and are locally thicker than 10 meters. Exposures are poor and typically mantled by regolith. The thickness obtained from the log of the Muñoz Canyon AAN Fed. No.1 well is 1,685 feet.

03-01-05-00-00—Unit—Pa—Abo Formation (in Cross-Section Only)—Shown only in the cross-sections. The thickness obtained from the log of the Muñoz Canyon AAN Fed. No.1 well is 370 feet.

04-00-00-00-00—Heading02—Precambrian—Precambrian (in Cross-Section Only)—Precambrian

04-01-00-00-00—Unit—=—Precambrian (in Cross-Section Only)—Precambrian

Explanation of Map

31.08 Map boundary.

1.1.1 Contact—Identity and existence certain, location

1.1.2 Contact—Identity or existence questionable, location

1.1.3 Contact—Identity and existence certain, location

23.10 Collapse structure or sinkhole (drawn to scale).

17.10 Direction of downslope movement of

5.1.1 Anticline (1st option)—Identity and existence certain, location

5.1.3 Anticline (1st option)—Identity and existence certain, location approximate

5.1.7 Anticline (1st option)—Identity and existence certain, location

5.5.1 Syncline (1st option)—Identity and existence certain, location

5.5.7 Syncline (1st option)—Identity and existence certain, location

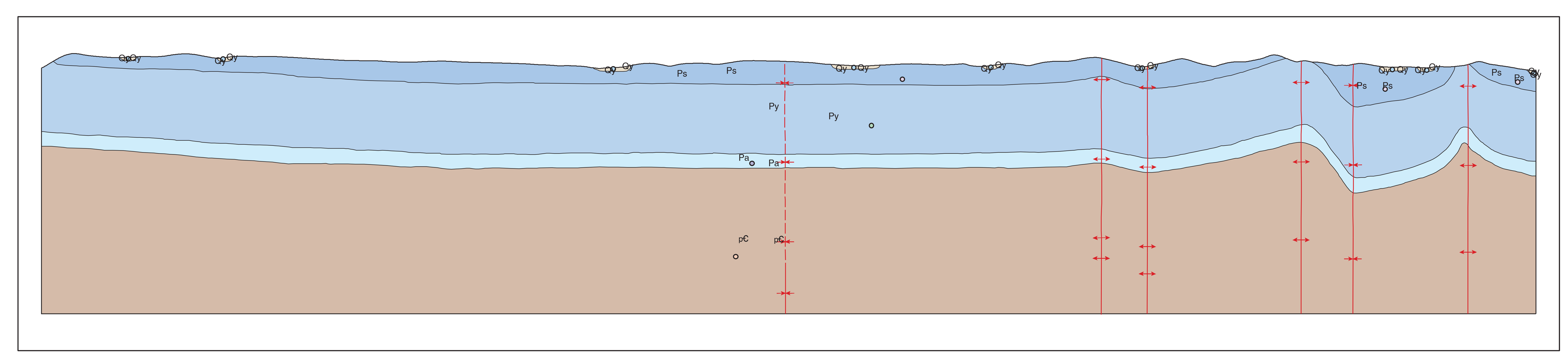
6.2 Inclined

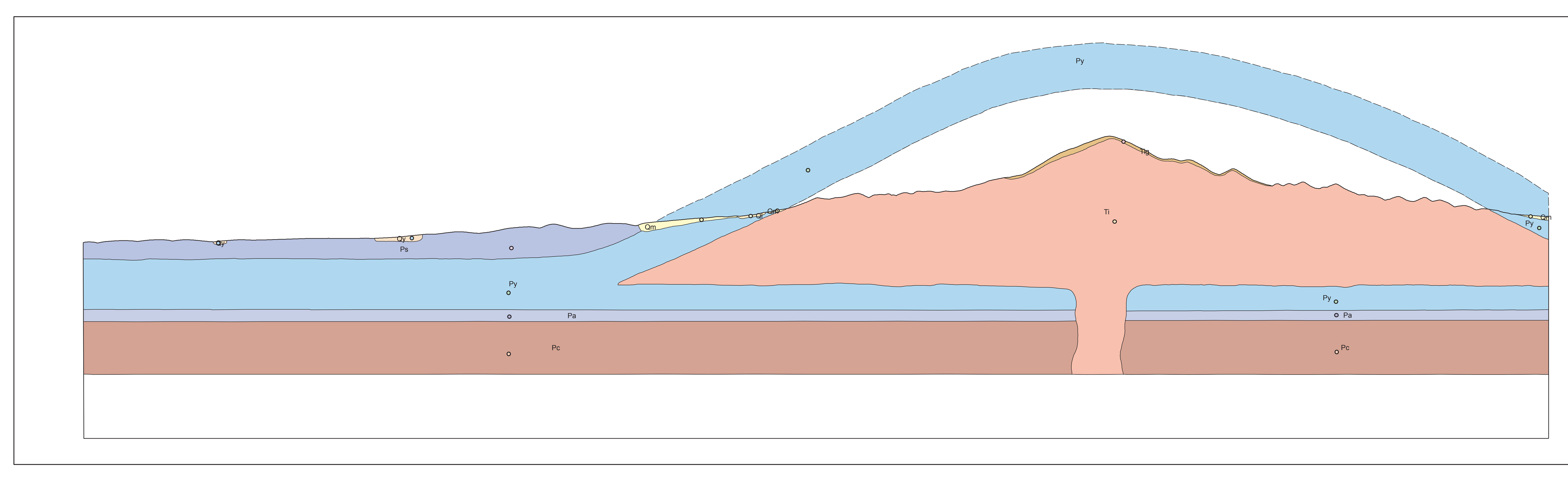
6.3 Vertical

6.4 Overturned

6.41 Moderately inclined (between 30¦ and 60¦) bedding, as determined remotely or from aerial photographs

31.10 Cross section





Base map from U.S. Geological Survey 2010.
North American Datum of 1927 (NAD27)
Projection and 1,000-meter grid: Universal Transverse Mercator, Zone 13S, shown in blue.
10,000-foot ticks: New Mexico Coordinate System of 1983(Central zone), shown in red.

Roads..........©2006-2010 Tele Atlas
Names..........GNIS, 2008
Hydrography..........National Hydrography Dataset, 2005
Contours..........IFSAR 4.5 m Digital Terrain Model, 2008

Encinoso	Kyle Harrison Canyon	Arroyo Serrano West
Capitan Pass	Capitan Peak	Arabela
Lincoln	San Patricio	Nelson Canyon West

Magnetic Declination
June 2009
8º 42' East
At Map Center

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, Kelly K. Boyd, Amy L. Dunn, and Katie Sauer

1:24,000

1 0.5 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometer

Contour Interval 40 Feet

National Geodetic Vertical Datum 1929

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

Geologic Map of the Capitan Pass Quadrangle, Lincoln County, New Mexico

June, 2010

by
Steven J. Skotnicki

281 W. Amoroso Dr., Gilbert AZ 85233

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.

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