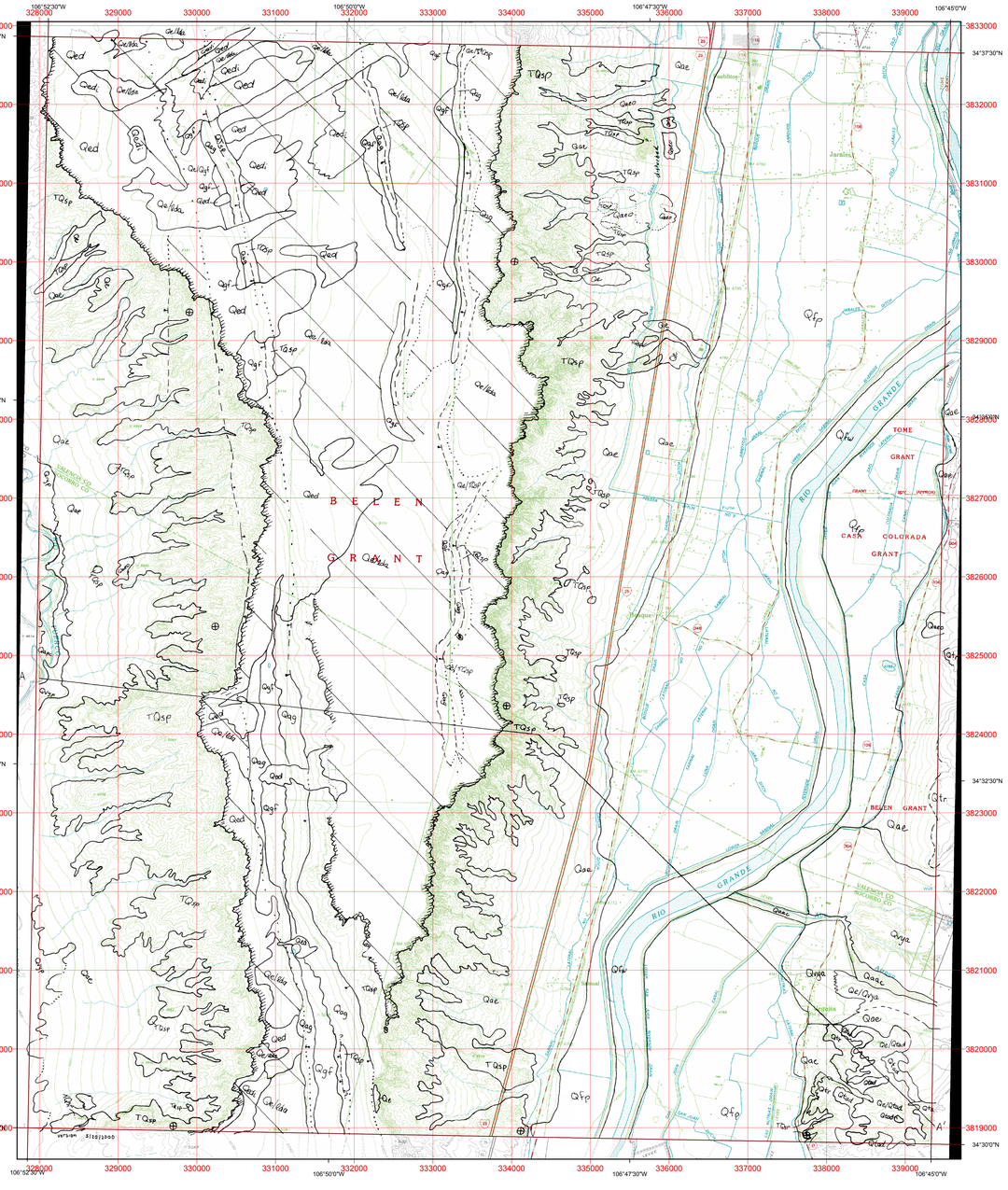
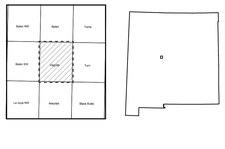


Base from U.S.Geological Survey 1984, from photographs taken 1976 and field checked in 1976.
Map edited in 1984
1983 North American datum, UTM projection -- zone 13
Border quads using 1927 North American datum, UTM projection -- zone 13
1000- meter Universal Transverse Mercator grid, zone 13, shown in red



Magnetic Declination
May, 2002
10° 19' East
At Map Center

Geologic Map of the Veguita 7.5 - minute quadrangle

by

David W. Love

May 1999

1:24,000

0 0.25 0.5 1 1.5 2 Miles

0 0.25 0.5 1 1.5 2 Kilometers

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

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map may be based on any of the following: reconnaissance field geologic mapping, compilation of published and unpublished work, and photogeologic interpretation.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 associated with recent development may not be shown.

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 map has not been reviewed according to New Mexico Bureau of Geology and Mineral Resources standards. The contents of the report and map should not be considered final and complete until reviewed and published by the New Mexico Bureau of Geology and Mineral Resources. The views and conclusions contained in this document 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.

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This and other maps are available in PDF format from:
http://geoinfo.nmt.edu/statemap

or contact:
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NMBGMR Geologic Information Center -- [505] 835-5145

DRAFT

NMBGMR OF-GM 28

This draft geologic map was produced from scans of hand-drafted originals from the author(s). It is being distributed in this form because of the demand for current geologic mapping in this important area. The final release of this map will be made following peer review and redrafting in color using NMBGMR cartographic standards. The final product will be made available on the internet as a PDF file and in a GIS format.

Preliminary Geologic Map of Veguita Quadrangle

Mapped and compiled by David W. Love

EXPLANATION OF MAP UNITS

Rock colors are by comparison with the rock-color chart by Goddard and others (1948).

Qfw Historic floodway of Rio Grande, including channel and adjacent floodplain contained between artificial barriers such as levees and irrigation and drainage ditch banks. Channel consists of pebbly sand in dune and ripple bedforms and larger longitudinal, transverse, and attached bars. Waning-flow deposits consist of laminated sand, silt and clay. Less than 5 m thick.

Qfp Historic floodplain of Rio Grande between artificial barriers and valley margins. Consists of silt and clay overlying sandy overbank and channel deposits. Commonly disturbed by agricultural fields and subdivisions. Less than 5 m thick.

Qr Late Pleistocene and Holocene fill of Rio Grande valley shown in cross section only. Primarily pebbly sand, silt and clay. At valley margins, interfingers with Qae and Qvya. About 25 m thick.

Qaec Historic active sandy channel and inner floodplain of Rio Puerco. Channel within arroyo box is predominantly sand with rare pebbles. Floodplain is sand, silt, and clay up to 10 m thick.

Qvyp Holocene valley fill of the Rio Puerco. Sand, silt, and clay dominate the fill with pebbly sand tongues from the valley margins. Radiocarbon contained in the upper 4 m ranges from 2,000 to 12,000 years old. At least 10 m exposed; total thickness to 43 m.

Qaac Historic sandy channel of Abo Arroyo. Channel within arroyo box is predominantly pebbly sand with clasts to boulder size. Less than 10 m thick.

Qvya Late Pleistocene and Holocene valley fill of Abo Arroyo. Sand and silt dominate the fill with 10 R hues, but cobble and boulder gravel lenses form coarser deposits and bar and swale topography locally at surface. At least 5 m exposed; as much as 25 m thick.

Qed Late Holocene eolian deposits with recent dune form development.) Light brown (5YR6/4), grayish orange (10'YR7/4), to very pale orange (10YR8/2), unconsolidated, fine grained, angular to well rounded, well sorted sand composed mostly of quartz. Up to 4 m thick.

Qedi Holocene eolian deposits with older dune form development. Commonly overridden or reworked into Qed. Light brown (5YR6/4), grayish orange (10'YR7/4), to very pale orange (10'YR8/2), unconsolidated, fine grained, angular to well rounded, well sorted sand composed mostly of quartz. Up to 3 m thick.

Qe Holocene and Pleistocene eolian sheet deposits with subdued or no dune forms. Light brown (5YR6/4), grayish orange (10'YR7/4) to very pale orange (10'YR8/2), unconsolidated, fine grained, well rounded, well sorted sand composed mostly of quartz. Commonly deposits have one or more episodes of soil development beneath the surface. Up to 3 m thick. Qe/ units indicate where Qe overlies subjacent unit; for example Qe/Qad. Qe/lda are eolian sand sheets overlying Llano de Alburquerque (lda, see TQsp explanation below).

Qae Holocene and Late Pleistocene sandy and pebbly alluvium and eolian deposits in alluvial aprons along valley margins. Sand is unconsolidated, yellowish gray (5Y7/2) to grayish gray (5Y8/4).

Qaeo Older Quaternary alluvium along valley margins derived from ancestral Rio Puerco deposits within Santa Fe Group basin fill. Consists of pebbly sand with uncommon cobbles. Qae is inset against these older deposits.

Qgf Historic, Holocene and Pleistocene alluvial, eolian and playa deposits along graben-floor drainages. Deposits are sand, silty sand, and clay. Sandy lunettes poorly developed downwind of playas to northeast.

Qag Late Quaternary short, sandy, alluvial aprons and sand ramps downslope from faults on scarps cutting Llano de Alburquerque.

Qad Late Quaternary alluvial apron and eolian sand reworked from Abo terrace Qta and graded primarily to Rio Grande terrace Qtr. Less than 5 m thick.

Qtr Quaternary terrace of Rio Grande 30 to 35 m above Rio Grande floodplain on eastern margin of quadrangle. Unit as mapped includes tongues of alluvium of Abo Arroyo (Qta in cross section). Cuts and overlies older (Pliocene?) cemented sands and pebbly sands of the ancestral Rio Grande (TQsr). Sands are very pale orange to grayish orange (10 YR 8/2 to 10 YR 7/4). Gravel ranges in size to small cobbles, and consists of well-rounded, resistant rock types such as quartzites, gneisses, a wide range of volcanic and plutonic rocks, siliceous sediments and silicified wood. Contains obsidian (Rabbit Mountain) and pumice from the Jemez Mountains. Up to 20 m thick.

Qta Quaternary terrace deposits of Abo Arroyo 30 to 45 m above adjacent Rio Grande floodplain on extreme southeastern margin of map. Sands, silts and clays derived from Permian redbeds in headwaters are moderate reddish orange (10 R 6/6). Includes 2 m tongues of fine sand, silt, and clay of Qtr. Gravel ranges in size to 40-cm-cobbles of subrounded limestones, sandstones, granite, quartzites, schists and gneisses. At least 25 m thick to east.

TQsp Late Tertiary and early Pleistocene (?) basin fill of Santa Fe Group deposited by ancestral Rio Puerco and inter-channel eolian and pedogenic processes. Exposed along west valley margin of Rio Grande, along fault scarps of Llano de Alburquerque, and along Rio Puerco valley margin. Sediments consist of pebbly sand, silt and clay with predominantly 7.5 YR pale hues. Pebbles appear to be bimodal in size with ninety-five percent less than 3 cm in length, with remaining 5 percent ranging from about 10 to 50 cm in length. The small pebbles are predominantly well rounded siliceous pebbles such as quartzites, jaspers, cherts, and petrified wood. Larger pebbles and cobbles are predominantly subrounded basalt, granitic rocks, carbonate-cemented sandstones (recycled from Santa Fe Group), Pedernal chert, other sedimentary rocks and rare intermediate and silicious volcanic rocks. Upper 20 m contains rare pebbles of 3-Ma Grants obsidian. Contains Blancan fauna. Lowest exposures along Rio Grande valley may contain ancestral Rio Grande pebbly sands. Also includes laterally continuous sandy and clayey soils, and cross-bedded and sheet eolian sands. Top of unit is a geomorphic surface of maximum basin aggradation known as Llano de Alburquerque (lda) and is delineated by northwest-trending diagonal bars . White (N9) to bluish-white (5B9/11) thick (up to 3 m), stage III-IV (Birkeland, 1984; Machette, 1985) pedogenic calcic horizon has developed at the top of the unit beneath the Llano de Alburquerque and is delineated by northeast-trending short hachures where exposed.

TQsr Late Tertiary and early Pleistocene (?) deposits of the ancestral Rio Grande within the Santa Fe Group basin fill. In the southeastern corner of the map, these cross-bedded pebbly sands, silts and clays are well cemented. Exposures are poor. Subsurface thickness unknown, but presumably hundreds to thousands of meters. Interfingers to west with TQsp and to east with TQsa.

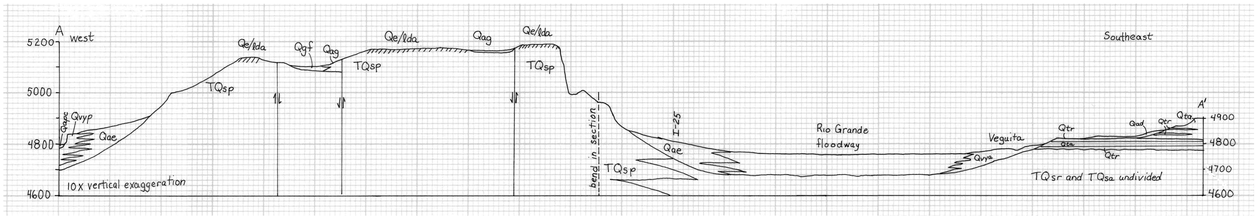
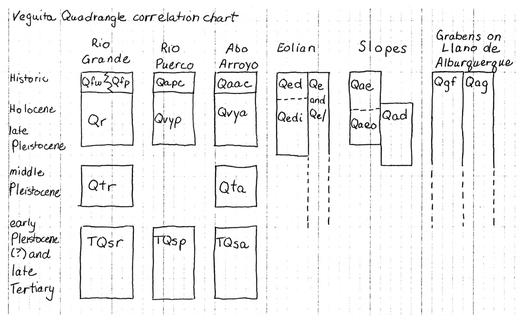
TQsa Late Tertiary and early Pleistocene (?) deposits of Abo Arroyo within the Santa Fe Group basin fill. Not exposed on this quadrangle; shown in cross section combined with TQsr, the equivalent facies of the ancestral Rio Grande. This unit consists of red (10 R 6/6) sands, silts and clays derived from the Permian-redbed headwaters of Abo Arroyo and coarse lenses of subrounded pebbles to cobbles of limestone, sandstone, granites, and metamorphic rocks (quartzites, metarhyolites, schists). Assumed to be hundreds to thousands of meters thick.

SYMBOLS

Contact, dashed where approximate, dotted where concealed.

Normal fault, bar on down-thrown side; dashed where approximate, dotted where buried

Horizontal beds

Short, northeast-trending hachures: exposed calcic horizons developed at top of TQsp beneath Llano de Alburquerque

Northwest-trending diagonal bars: Llano de Alburquerque geomorphic surface of maximum aggradation