Geologic Map of the
Monica Saddle Quadrangle,
Socorro County, New Mexico.

By

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Open-file Digital Geologic Map OF-GM 217

Scale 1:24,000

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MONICA SADDLE UNIT DESCRIPTIONS


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af Man-made deposits (Holocene) – Earthen dams for tanks along active gulleys or
valleys.

Qv Active alluvium (Holocene) - Active and recently active alluvium, usually along
stream ways, typically incised <1m.

Qt Terrace deposits (Holocene to Quaternary) – Remnant areas of alluvium with
flat upper surfaces more than 1m above active drainages.

Qbs Eolian deposits (Quaternary) – Deposits consist of active and vegetated dunes
(fine to medium-grained sand) and silt (loess).

Qpl Pluvial and lacustrine deposits (Quaternary) – Deposits are fine grained playa
muds and silts locally mantled with eolian sand.

Qca Colluvium and other slope deposits (Quaternary)

Qtc Talus and other slope deposits on steep slopes(Quaternary)

Qf Alluvial fan and piedmont deposits (Quaternary) - Deposits are typically
incised <5m. clasts are derived from a local source.

Ted East Red dacite (Miocene – Oligocene) – dark purple dacite intrusions
containing 5 to 20 percent large plagioclase phenocrysts. Occurs as discrete dikes and
small stocks within the South Canyon Tuff exposures in southeastern third of the
quadrangle

Tsc South Canyon Tuff (Oligocene) – Rhyolitic ash-flow tuff containing 4-30%
phenocrysts of plagioclase, sanidine, quartz, and biotite. Lithic-lapilli are generally <5%,
and pumice lapilli 5-25%. Thickness: 0 - >1000m. Phenocryst content in South Canyon
is zoned from about ~5 % at the base increasing abruptly to 30% in the upper parts.
Mapped as Tsc1 and Tscu respectively in outflow exposures where thickness and
exposure permit. Within the caldera (SE part this quadrangle) five subdivisions are
sometimes mapped. Tsc1- 4 -10% phenocrysts of sanidine and quartz in sub equal
amounts , Tsc2- 10-15% phenocrysts of sanidine and quartz usually with abundant lithic
fragments, Tsc3- 15-30% phenocrysts of sanidine, quartz and minor plagioclase and
biotite, Tsc4- 30-40% phenocrysts similar to Tsc3 but containing noticeable amounts
dark-red, quartz-poor pumice (plagioclase, biotite and hornblende), Tsc5 – 30-40% phenocrysts of feldspar biotite and hornblende, no quartz.

Tlpc Basalt to basaltic andesite (Oligocene) – Vesicular basalt and basaltic andesite lavas containing < 10% phenocrysts of plagioclase, olivine, and pyroxene. Occurs between rhyolite of Durfee Canyon and tuff of Caronita Canyon, between tuff of Caronita Canyon and Lemitar Tuff and above Lemitar Tuff.

TII/Tlu Lemitar Tuff (Oligocene)- Densely welded rhyolite to rhyodacite ash flow tuff containing 10-35% phenocrysts and 5-25% pumice lapilli. Unit is complexly zoned from phenocryst-poor rhyolite (10-15%) in lower parts (TII) to crystal rich rhyodacite to rhyolite (25-35%) in upper (Tlu). Upper member consists of a lower dk-red rhyodacite (20-35 % plagioclase, sanidine, and biotite) which grades upward into a phenocryst-rich rhyolite (30-35% sanidine, plagioclase, quartz, and biotite).

Txc Caronita Canyon (tuff of) - Rhyolite to rhyodacite ash flow tuff (10-35%), Crystal-poor (biotite, plagioclase) lower member; crystal-rich (sanidine, quartz, plagioclase, biotite) upper member.

Tar rhyolite of Durfee Canyon - Rhyolite lavas containing 2-8% phenocrysts, chiefly sanidine up to 5 mm. Occasionally contains secondary pseudobrookite and bixbyite in gas cavities. Lava often underlain by tuffs, and minor flow breccias, and volcanoclastic sedimentary rocks (Tdrt).

Tir rhyolite dikes- Rhyolite dikes similar in mineralogy to rhyolite of Durfee Canyon.

Tvp Vicks Peak Tuff (Oligocene) – Densely welded rhyolitic ash-flow tuff containing 1-15% phenocrysts, chiefly sanidine up to 4mm, lesser plagioclase up to 2mm, and sparse pyroxene, hornblende, and biotite <2mm. The tuff contains 2-25% strongly flattened pumice lapilli up to 1m long, and sparse <10cm lithic lapilli. The tuff is typically light gray and the pumice lapilli are commonly recessive on weathered surfaces. Thickness: up to 150m.

Tj La Jencia Tuff (Oligocene) – Densely welded rhyolitic ash-flow tuff containing 2-10% phenocrysts of sanidine (1-4mm) and plagioclase (1-2mm), and minor biotite, pyroxene, and hornblende, and quartz. The tuff is generally light to dark gray and contains 5-15% strongly flattened pumice lapilli up to 1m long, and up to 5% lithic lapilli. Thickness: up to 120m.

Tia mafic dikes – rhyolite dikes and sills within southwestern third of quadrangle. Stratigraphic position is unclear.

Thm Hells Mesa Tuff (Oligocene) – Densely welded phenocryst-rich rhyolitic to trachytic ash-flow tuff containing 20-35% phenocrysts of plagioclase (≤3mm), sanidine (≤3mm), quartz (≤4mm), hornblende (≤2mm), and biotite (≤2mm). The tuff is reddish
brown to orange in color and contains sparse lithic lapilli and generally <10% pumice lapilli <10cm long. Thickness: Up to 400m.

**Tdbc  Blue Canyon Tuff (Oligocene)** – Moderately phenocryst-rich ash-flow tuff containing 10-20% 1-4mm plagioclase phenocrysts, and abundant 1-3mm biotite. Thickness: Up to 150m.

**Tdrh  Rock House Canyon Tuff (Oligocene)** – Phenocryst-poor mafic lava contains less than 5% < 3mm feldspar phenocrysts, and a trace of mafics. Thickness: Up to 150m.