

# Geologic Map of the Oak Peak 7.5-Minute Quadrangle, Catron and Socorro Counties, New Mexico

By  
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*Open-file Digital Geologic Map OF-GM 065*

**Scale 1:24,000**

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

**Qv Valley alluvium (Holocene)** – Active alluvium in valleys, gulleys, and along active stream beds, generally incised <3m.

**Qt Terrace deposits (Quaternary)** – Terrace deposits composed of alluvium incised more than 3m above nearby active alluvial deposits.

**Qca Colluvium and alluvium (Holocene – Quaternary)**

**Qtc Talus and colluvium (Holocene - Quaternary)**

**Qpl Lacustrine deposits (Quaternary)** – Clay, silt, and fine-grained sandy playa deposits.

**Qp Piedmont deposits (Quaternary)** – Sand and gravel deposited in alluvial fans.

**QTsf Santa Fe Group (Pleistocene – Miocene)** – Conglomerate and sandstone, typically volcanoclastic and moderately indurated. Thickness: 0-100m.

**Tbt Beartrap Canyon Formation (Miocene)** – Volcanoclastic sandstone, conglomerate, and lesser nonwelded felsic tuff. The tuffs are derived from intercalated phenocryst-poor and phenocryst-rich rhyolite and phenocryst-rich dacite lava flows, and domes. Clasts and lithics are chiefly rhyolitic, derived from intercalated lavas, or older lavas and ignimbrites; chiefly South Canyon Tuff, but also locally, other older Datil Group tuffs. Sandstone and conglomerate are commonly complexly interleaved. Locally, some moderate to high-angle, cross-stratified, medium- to thick-bedded sandstone sequences are strongly suggestive of eolian deposition. Thickness: 0-300m.

**Tbr Beartrap Canyon Formation, phenocryst-poor rhyolite lava and lava domes (Miocene)** – Rhyolite lava and hypabyssal rhyolite containing less than ~10% phenocrysts of feldspar, biotite, ± quartz.

**Tbtd Beartrap Canyon Formation, phenocryst-rich dacitic lava and lava dome (Miocene)** – Dacitic lava containing >25% plagioclase, with biotite and lesser hornblende phenocrysts.

**Tbhr Beartrap Canyon Formation, rhyolite lava of Bald Hill, (Oligocene)** – Rhyolite lava and hypabyssal rhyolite containing less than ~10% phenocrysts of feldspar, biotite, ± quartz.

**Tbhr** **Beartrap Canyon Formation, rhyolitic tuff associated with rhyolite of Bald Hill (Oligocene)** – Moderately phenocryst-poor, nonwelded rhyolitic tuff associated with the Bald Hill rhyolite lava (Tbhr).

**Tts** **Turkey Springs Tuff (Oligocene)** - Welded to non-welded rhyolite ash-flow tuff containing 2-25% (increasing upwards) phenocrysts of quartz, sanidine, plagioclase, and biotite. The tuff is typically light gray to pink and contains up to 20% pumice lapilli, and 5-10% lithic lapilli. Thickness: 0-500m.

**Tb** **Basaltic lava (Oligocene)** – Mafic lava containing up to 10% 1-2mm pyroxene and/or olivine phenocrysts and lesser plagioclase phenocrysts up to 3mm. The basalt is interleaved with some upper flow units of the South Canyon Tuff (**Tsc**) and with the volcanoclastic sandstone (**Tss**). Thickness: 0-160m.

**Tss** **Volcanoclastic sandstone (Oligocene)** – Sandstone and minor conglomerate. Thickness: 0-75m.

**Thd** **Dacite of Hog Hill (Oligocene)** – Dacitic lava and intrusive dacite in the southwest-central part of the map area. The dacite contains 5-15% phenocrysts of plagioclase, biotite, hornblende?

**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 - 500m.

**Tba** **Basaltic andesite lava (Oligocene)** – Mafic lava containing up to 10% 1-3mm plagioclase phenocrysts and sparse pyroxene and/or olivine. Thickness: 0-75m.

**Ts** **Sandstone (Oligocene)** – Volcanoclastic sandstone and sparse pebbly sandstone and conglomerate that overlies the Vicks Peak Tuff (**Tvp**) in the southwestern part of the map area. Thickness: 0-10m.

**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 90m.

**Tdr** **Rhyolite of Durfee Canyon (Oligocene)** – Moderately phenocryst-poor (3-7%) rhyolite lava containing mainly sanidine up to 3mm, biotite up to 2mm, and sparse quartz up to 2mm. Thickness: 0 - >200m.

**Tql** **Quartz-porphyrific lava (Oligocene)** – Moderately phenocryst-poor quartz-porphyrific intermediate to felsic lava. Age relationship to other units except the La Jencia Tuff, which it intrudes, is unknown.

**Thl Hornblende lava (Oligocene)** – Hornblende-porphyrific intermediate lava and a related dike (**Thli**) along the western edge of the map area. Age relationship to other units unknown.

**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.

**Trs Rhyolite of Sullivan's Hole (Oligocene)** – Moderately phenocryst-poor rhyolitic lava occurs along the southern edge of the map area. The lava contains 5-7% phenocrysts <3mm of feldspar, biotite and minor quartz. Thickness: 0-70m.

**Trst Rhyolitic tuff of Sullivan's Hole (Oligocene)** – Nonwelded felsic tuff associated with the rhyolite of Sullivan's Hole (Trs). Thickness: 0-25m.

**Tfu Undifferentiated felsic lava or hypabyssal rocks (Oligocene)** – Small isolated outcrops of strongly silicified felsic porphyry displaying flow-foliation, and breccia, possibly autobreccia. All phenocrysts, which may have made up to 15% of the rock are completely altered.

**Tml Mafic lava (Oligocene)** – Mafic lava containing up to 5-7%,  $\leq 2.5$ mm plagioclase and up to 2-4%, 1mm green clinopyroxene (?) phenocrysts. The lava is typically strongly altered with abundant quartz amygdules. Thickness: 0-30m.

**Tha Hornblende Andesite lava (Oligocene)** – Andesitic lava containing 5-10% phenocrysts of  $\leq 2$ mm rounded, subhedral to euhedral plagioclase with thin K-feldspar rims, 1-3%,  $\leq 1$ mm biotite, and up to 2%, 1-4mm tabular hornblende. Thickness: 0-100m.

**Ths Volcaniclastic rocks (Oligocene)** – Volcaniclastic sandstone and conglomerate containing mostly mafic detritus. Thickness: 0-30m.

**Thm Hells Mesa Tuff (Oligocene)** – Densely welded phenocryst-rich rhyolitic to trachytic ash-flow tuff containing 20-35% phenocrysts of plagioclase ( $\leq 3$ mm), sanidine ( $\leq 3$ mm), quartz ( $\leq 4$ mm), hornblende ( $\leq 2$ mm), and biotite ( $\leq 2$ mm). The tuff is reddish brown to orange in color and contains sparse lithic lapilli and generally <10% pumice lapilli <10cm long. Thickness: 0-25m.

**Tdt Ash-flow tuff (Oligocene)** – Moderately phenocryst-rich, feldspar-phyric ash-flow tuff containing 10-15% 1-2mm plagioclase and up to 5% 1-3mm biotite. Locally, the tuff contains up to 50% lithic lapilli and blocks up to several meters. Pumice lapilli

are generally small (<10cm) and sparse (0-10%). Thickness: >200m with no exposed base.