

DESCRIPTION OF MAP UNITS

Phenocrysts listed in order of decreasing abundance

- Qac ALLUVIUM AND COLLUVIUM (0-200 ft.)--unconsolidated stream deposits, fans, talus, and slope-ash deposits.
- Trf RHYOLITE FLOW (100 ft.)--light-gray devitrified to dark gray vitrophyric lava flow.
- Tbb RHYOLITE OF BOUNDARY BUTTE (150 ft.)--light-gray devitrified to dark gray vitrophyric lava flow.
- Tsu THIRSTY CANYON TUFF (SPREADS) - MEMBER: Upper part (25-100 ft.)--simple ash-flow cooling unit; abundant small pumice and lithic inclusions; phenocrysts of alkali feldspar, clinopyroxene, plagioclase, and olivine; upper part, moderate orange pink, partly welded, devitrified; lower part, light gray, nonwelded to partly welded, glassy.
- Tb OLIVINE BASALT (0-100 ft.)--two dark-gray lava flows; phenocrysts of olivine and clinopyroxene.
- Tdm BASALT OF DOME MOUNTAIN (0-800 ft.)--dark-gray lava flows; phenocrysts of plagioclase.
- Tps TUFFACEOUS SANDSTONE AND GRAVEL (0-500 ft.)--upper part, nonwelded, bedded, gravel; lower part, yellow moderately indurated zeolitized tuffaceous sandstone.
- Tip RHYOLITE FLOWS OF PINNACLES CANYON: RHYOLITE OF PINNACLES RIDGE (0-700 ft.)--light- to dark-gray devitrified to vitrophyric lava flow or steep abundant phenocrysts of quartz, alkali feldspar, plagioclase, biotite, and magnetite; includes related white to pink ash-fall and reworked tuff.
- Tpfd Feeder dikes--coarse assorted tuff breccia and light- to dark-gray devitrified to vitrophyric rhyolite, fluidal rhyolite, part brecciated and included in tuff breccia; part intrudes tuff breccia.
- Tlc RHYOLITE OF COMB PEAK (0-1,100 ft.)--light-gray to grayish-pink devitrified and light-gray to black vitrophyric lava flow; phenocrysts of plagioclase, alkali feldspar, hornblende, quartz, magnetite, biotite, and sphene; includes related locally zeolitized ash-fall and ash-flow tuff and tuff breccia.
- Tlc RHYOLITE OF WATERPIPE BUTTE (0-800 ft.)--light- to dark-gray devitrified to vitrophyric lava flow or domes; distinctively abundant and large (commonly as large as 5 mm) phenocrysts of alkali feldspar, plagioclase, quartz, hornblende, biotite, and magnetite; includes related white to gray ash-fall and reworked tuff.
- Tld RHYOLITE OF DELIRIUM CANYON (0-500 ft.)--light-gray devitrified and vitrophyric lava flow; phenocrysts of alkali feldspar, plagioclase, biotite, magnetite, and sphene; includes related zeolitized ash-fall and ash-flow tuff.
- Tlv RHYOLITE OF VENT PASS (0-500 ft.)--gray, pinkish, and porphyritic devitrified and gray to green vitrophyric lava flow; partly microbrecciated and silicified; phenocrysts of alkali feldspar, plagioclase, hornblende, magnetite, and sphene; includes related zeolitized ash-fall and ash-flow tuff.
- Tlb RHYOLITE OF BLACK GLASS CANYON (25-100 ft.)--gray to brown devitrified lava flow; phenocrysts of alkali feldspar, plagioclase, hornblende, and magnetite; includes related tuff and tuff breccia.
- PICTURE CANYON FORMATION:
- Tacf TUFF OF CRATER FLAT (250 ft.)--simple cooling unit; phenocrysts of alkali feldspar, plagioclase, quartz, biotite, magnetite, and clinopyroxene; upper part, light gray partly welded vapor-phase zone; lower part, bright pink partly welded to buff non-welded, glassy.
- Tba TUFF OF AMMONIA TANKS (20-75 ft.)--simple cooling unit; sparse collapsed pumice, moderately abundant small lithic inclusions; abundant phenocrysts of alkali feldspar, plagioclase, quartz, biotite, clinopyroxene, and magnetite; upper part, pale brown, densely welded, devitrified; lower part, black vitrophyric.
- Tbw RHYOLITE OF BEATTY WASH (0-200 ft.)--light-gray devitrified to vitrophyric lava flow; phenocrysts of plagioclase, alkali feldspar, biotite, magnetite, and sphene.
- Tb RHYOLITE OF WINDY WASH (0-350 ft.)--light-gray to black devitrified to vitrophyric lava flow; abundant phenocrysts of quartz, alkali feldspar, plagioclase, biotite, and sphene; includes related zeolitized reworked ash-fall tuffs and tuff breccias.
- Twd FEEDER DIKES--coarse assorted incidental tuff breccia and light-gray devitrified to black vitrophyric rhyolite, fluidal rhyolite, part brecciated and included in tuff breccia; part intrudes tuff breccia.
- Tac TIVA CANYON MEMBER (100-500 ft.)--compound ash-flow cooling unit; phenocrysts of alkali feldspar, biotite, plagioclase, and clinopyroxene; upper part, moderately abundant collapsed pumice, abundant phenocrysts, gray to brown, moderately to densely welded, glassy to devitrified; middle part, sparse collapsed pumice and phenocrysts, gray, densely welded, devitrified, partly lithophysal; lower part, moderately abundant pumice and phenocrysts, gray, partly welded to nonwelded, glassy to devitrified, 5-10 ft. white ash-fall pumice at base.
- Tay YUCCA MOUNTAIN MEMBER (0-200 ft.)--simple ash-flow cooling unit; sparse phenocrysts of alkali feldspar and plagioclase; upper part, gray nonwelded to partly welded glassy to vapor-phase zone; middle part, pink brown and pale orange, densely welded, devitrified, partly lithophysal; lower part, gray, partly welded to nonwelded, glassy, 5-10 ft. white ash-fall pumice at base.
- TRZ RHYOLITE FLOW (0-50 ft.)--dark gray vitrophyric.
- Tpf TUFF OF PAH CANYON (10-300 ft.)--simple ash-flow cooling unit; moderately abundant small pumice and lithic inclusions, phenocrysts of biotite, alkali feldspar, plagioclase, and sparse quartz and clinopyroxene; upper part, pink nonwelded, glassy; middle part, light brown to pale orange, moderately welded, devitrified, partly lithophysal; lower part, gray, partly welded to nonwelded, glassy, 5-10 ft. white ash-fall pumice at base.
- Tpt TOPPAH SPRING MEMBER (0-400 ft.)--compound ash-flow cooling unit; phenocrysts of plagioclase, alkali feldspar, biotite, clinopyroxene, and rare quartz; top 5-10 ft. gray ash-fall pumice; remainder of upper part, abundant large collapsed pumice, abundant phenocrysts, black to brown, moderately welded, glassy to devitrified; upper-middle part, abundant large accidental lithic inclusions, abundant lithophysae, moderately welded; lower-middle part, sparse collapsed pumice and phenocrysts, mottled gray and brown, densely welded, devitrified; lower part, moderately abundant pumice and phenocrysts, brown, black, or pink, densely welded to nonwelded, devitrified, glassy, or zeolitized.
- Tpb BEDDED TUFF (0-270 ft.)--white to buff, glassy to zeolitized ash-fall, reworked, and nonwelded ash-flow tuff.
- Tcf RHYOLITE OF CALICO HILLS (0-1,500 ft.)--RHYOLITE LAVA FLOWS--light gray, pale purple, and pink devitrified, commonly microbrecciated and silicified, to light- to dark gray or grayish green vitrophyric; phenocrysts of quartz, alkali feldspar, plagioclase, and sparse magnetite and biotite.
- Tcb TUFF BRECCIA--vesicular glass blocks in zeolitized shard-and-pumice matrix.
- Tct BEDDED TUFFS--zeolitized, well-sorted, cross-stratified; moderately abundant cognate inclusions.
- Tf3 TUFFS OF PROW PASS: TUFF 3 (50 ft.)--simple ash-flow cooling unit; phenocrysts of plagioclase, alkali feldspar, quartz, biotite, and magnetite; upper part, gray vapor-phase zone; lower part, gray devitrified to brown glassy, densely welded to nonwelded.
- Tf2 TUFF 2 (10-25 ft.)--ash fall and reworked tuff.
- Tf1 TUFF 1 (100 ft.)--ash-flow cooling unit; gray, densely to moderately welded, devitrified, phenocrysts of quartz, plagioclase, alkali feldspar, biotite, and magnetite.
- Tp TUFF OF PINYON PASS (500 ft.)--simple ash-flow cooling unit; abundant small pumice and lithic inclusions; phenocrysts of alkali feldspar, plagioclase, biotite, magnetite, and clinopyroxene; upper part, light brown to pale orange, moderately to densely welded, devitrified; lower part, bright pink at top, buff in remainder, partly welded, glassy to zeolitized.
- Tcm TUFF OF CHOCOLATE MOUNTAIN: UPPER TUFF (100-400 ft.)--simple ash-flow cooling unit; dark brown to olive brown densely welded devitrified to black vitrophyric; abundant large collapsed pumice, phenocrysts of plagioclase, alkali feldspar, biotite, hornblende, quartz, and sphene.
- Tcm MIDDLE TUFF (500 ft.)--compound ash-flow cooling unit; medium brown to light red densely welded devitrified to black vitrophyric; abundant large collapsed pumice, phenocrysts of plagioclase, alkali feldspar, biotite, and magnetite; basal 2-5 ft. generally orange, moderately welded, glassy but devitrified, densely welded to lower tuff (Tcm) about mile westward of Chocolate Mountain.
- Tcl LOWER TUFF (1,000 ft.)--compound ash-flow cooling unit; brown, densely welded, devitrified; abundant collapsed pumice, moderately abundant lithic inclusions; phenocrysts of alkali feldspar, plagioclase, biotite, and magnetite, and sphene.
- Tbx TUFF BRECCIA (0-150 ft.)--massive, poorly sorted; numerous large accidental blocks as large as tens of feet across, internally brecciated.
- TRC RHYOLITE FLOWS AND TUFFS OF CLAIN CANYON: FLOW 1 (550 ft.)--light gray devitrified and greenish gray vitrophyric.
- Tcf TUFF 2 (325 ft.)--simple ash-flow cooling unit, upper part, gray, partly welded, devitrified; lower part, gray to pale brown, nonwelded, zeolitized, brecciated in eastern part of area.
- Tcf FLOW 3 (150 ft.)--dark gray and green vitrophyric.
- Tcf FLOW 2 (125 ft.)--dark pinkish-gray devitrified, brecciated, and altered in western part of area.
- Tcf TUFF 1 (250 ft.)--simple ash-flow cooling unit; gray, partly welded to nonwelded, devitrified to zeolitized; highly altered and brecciated in western part of area.
- Tcf FLOW 1 (325 ft.)--highly brecciated and silicified.

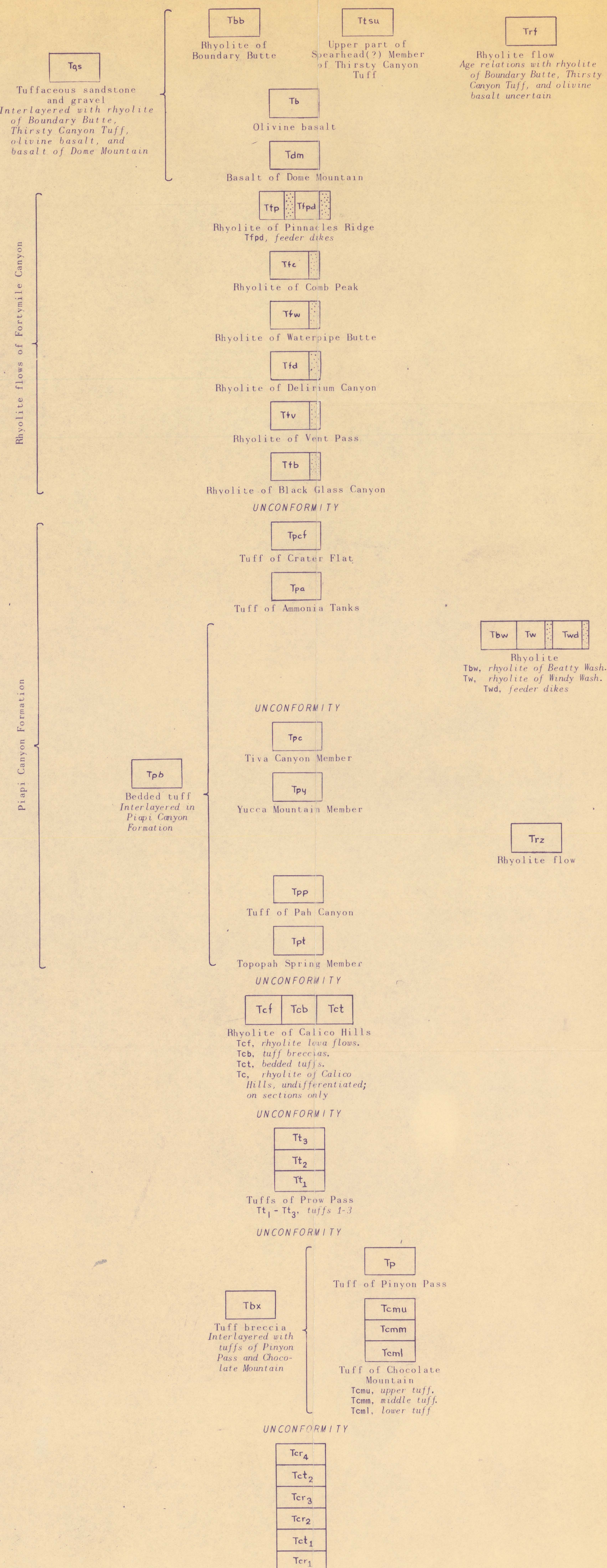


Base by U.S. Geological Survey, 1961

GEOLOGIC MAP OF THE TOPOPAH SPRING NW QUADRANGLE, NYE COUNTY, NEVADA

By
Robert L. Christensen and Peter W. Lipman
1964

EXPLANATION
(Stipple pattern indicates pyroclastic rocks)

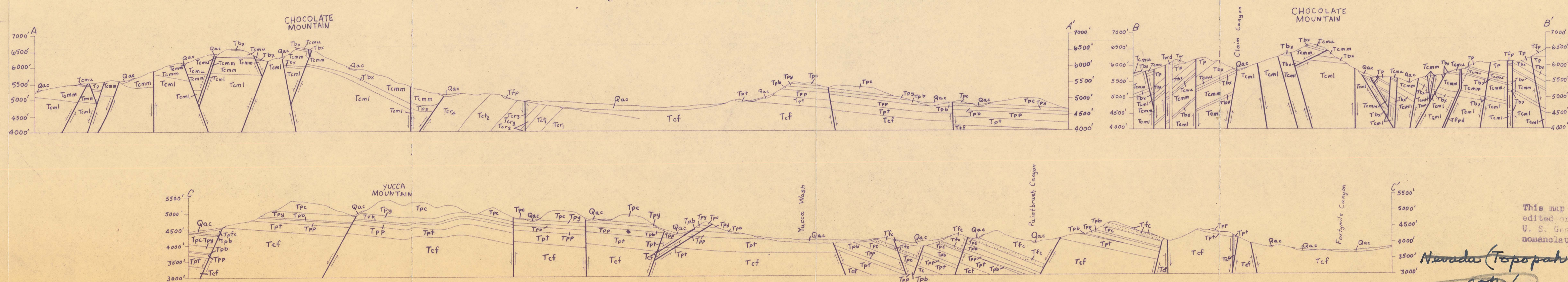


Rhyolite flows and tuffs of Claim Canyon
Trf - Tcf, flows 1-3
Tcl - Tcb, tuffs 1-2

Dashed where approximately located

Fault, showing dip
Dashed where approximately located; dotted where concealed; bar and ball on downthrow side

Strike and dip of stratification
Horizontal stratification
Strike and dip of foliation
Horizontal foliation
Strike of vertical foliation



This map is preliminary and has not been edited or reviewed for conformity with U. S. Geological Survey standards and nomenclature.

Nevada (Topopah Spring NW quad). Geol. 1:25,000. 1964.