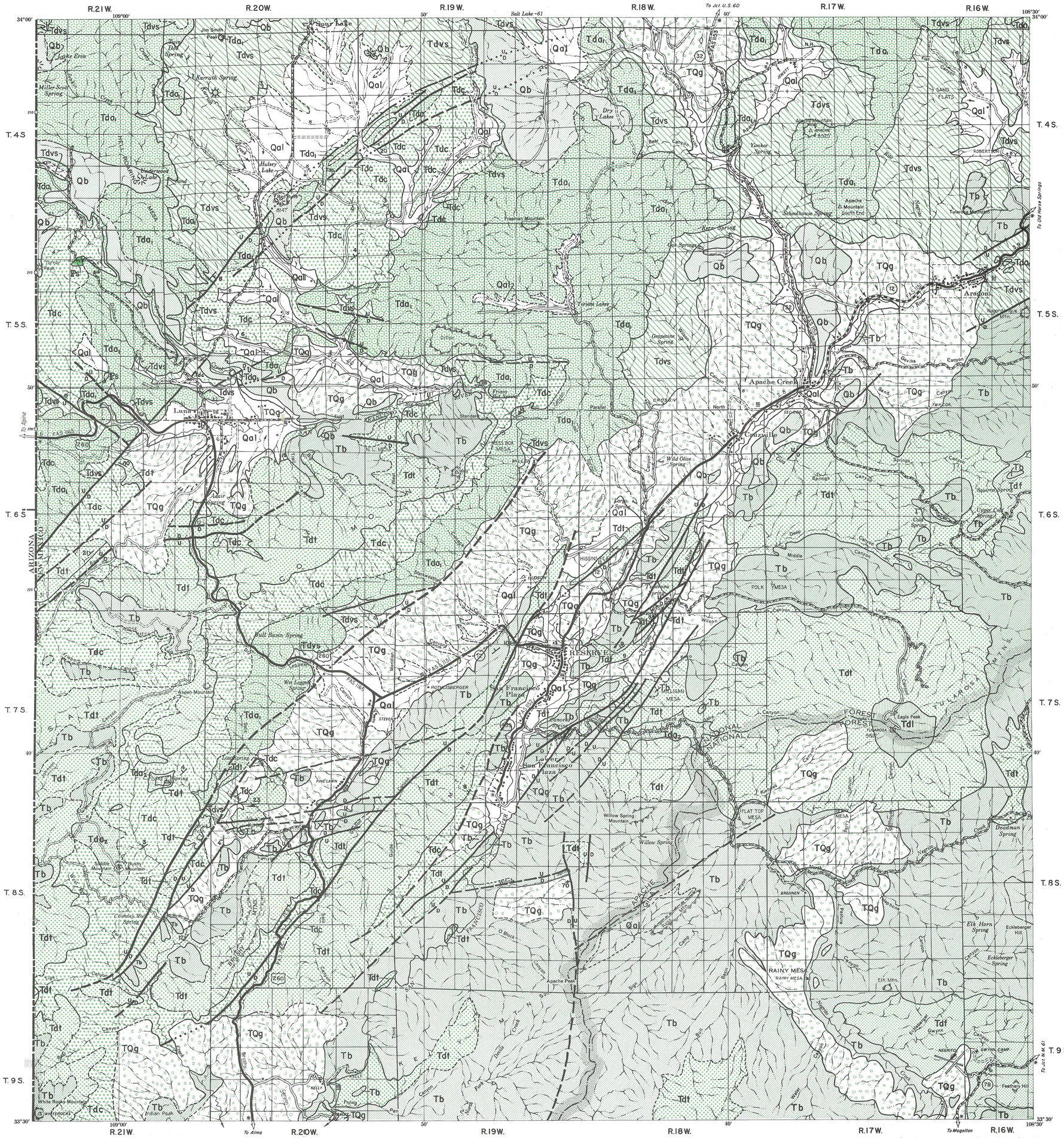
STATE BUREAU OF MINES
AND MINERAL RESOURCES
A. J. THOMPSON, DIRECTOR

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY
E. J. WORKMAN, PRESIDENT

GEOLOGY
RESERVE QUADRANGLE
NEW MEXICO

GEOLOGIC MAP 12



Base from Reserve Quadrangle of New Mexico State Highway Department.

Weber | Willard

13°
True North
Magnetic North
Approximate mean declination, 1959

RECONNAISSANCE GEOLOGIC MAP OF RESERVE THIRTY-MINUTE QUADRANGLE

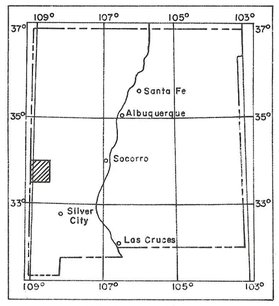
By Robert H. Weber and Max E. Willard

Scale: 1:126,720

1 0 1 2 3 4 5 6 7 8
Statute Miles

1959

Geology mapped in 1956-57
Geologic cartography by
E.S. Holman.



INDEX MAP
OF
NEW MEXICO

EXPLANATION

QUATERNARY

Qal — Alluvium

Qb — Basalt
Largely thin, black to gray, massive to vesicular flows; local breccia, tuff, and scoria. Commonly contains small olivine phenocrysts.

UNCONFORMITY

TQg — Gila conglomerate
Largely locally-derived volcanic conglomerate and sandstone. Includes local lacustrine clayey silt; thin rhyolite tuff and tuff breccia; and in some areas a thin cover of pediment veneer gravels, high-level alluvium, and alluvial fan gravels.

UNCONFORMITY

Tb — Basalt and basaltic andesite
Black to medium-gray, locally reddish-brown, fine-grained flows and flow breccias. Prominently vesicular at many places; locally contains amygdules of calcite, zeolites, clay, and silica minerals. Small reddish-brown grains of iddingsite are characteristic. Upper portion in some areas interlaid with Gila conglomerate (TQg). May include local equivalents of andesite-basaltic andesite sequence (Tda_2).

UNCONFORMITY

TERTIARY

Datil Formation

Tdf — Rhyolite

Tdl — Latite

Tdf:- Rhyolite flows. Light-gray porphyritic rhyolite containing large sanidine phenocrysts, many of which are surrounded by white reaction rims, others are completely altered. South of Elk Mountain includes porphyritic, spherulitic, and flow-banded rhyolite.

Tdt:- Rhyolite tuffs. White to buff, massive pumiceous and crystal tuffs and ash, with local thin sandstone and conglomeratic sandstone interbeds; light-gray to pinkish-gray welded tuff, commonly with pronounced planar structure and abundant coarse grains of quartz and sanidine. Eagle Peak section includes tuff breccia and many interbedded sanidine rhyolite flows.

Tdl:- Massive, fine-grained, light-gray latite. Megascopic crystals and crystal fragments of hornblende, biotite, plagioclase, and quartz are distributed uniformly throughout this unit.

Tdc — Volcanic conglomerate

Tda_1 — Andesite and basaltic andesite

Tda_2 — Andesite and basaltic andesite

Tdc:- Largely massive buff to gray, locally red, conglomerate of latite and andesite pebbles, cobbles, and boulders; grades into red andesite breccias in Pueblo Creek drainage area. Upper portion in San Francisco Mountains consists of tuffaceous sandstone and quartzose cross-laminated sandstone with interbedded rhyolite tuff. Local facies difficult to distinguish from Gila conglomerate (TQg).

Tda_1:- Light-gray to black porphyritic to equigranular flows, breccias, sills, and dikes; locally vesicular. Altered segments at many places contain seams, nodular masses, and/or amygdules of chalcedony, quartz, calcite, zeolites, and clay minerals. In part intercalated with rhyolite tuff.

Tda_2:- Medium-gray to black, fine- to medium-grained, locally porphyritic flows and possible sills. Interlaid with volcanic conglomerate (Tdc) and rhyolite pyroclastics (Tdt). Differentiated only in southern portion of mapped area where local equivalents may in part be included with later basalts (Tb).

Tdvs — Volcanic sediments
Gray to light-gray, locally greenish-gray to reddish-gray or red volcanic conglomerate, graywacke, sandstone, siltstone, and mudstone. Largely composed of volcanic rock fragments, but in some areas contains well-rounded pebbles and cobbles of limestone granite, and quartzite. Thin beds of water-laid rhyolite tuff and ash are locally present.

COVERED INTERVAL

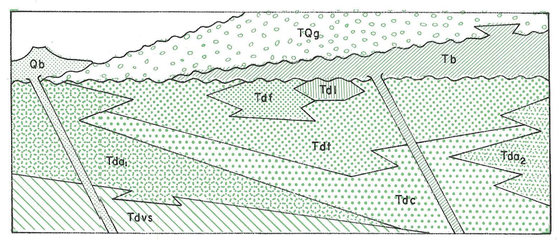
PENNSYLVANIAN

IPs — Pennsylvanian sediments
Light-gray to medium-gray fossiliferous marine limestone, reddish-brown calcareous siltstone, and coarse arkose. Represented by only two small outcrops northwest of Luna that may be rafted blocks in andesite (Tda).

Contact
Approximately located. Dashed where approximately located in western portion of map.

Fault
Dashed where approximately located or inferred.
D, downthrown side; U, upthrown side.

✳ Quaternary basalt cones, necks, craters.



Diagrammatic Relationships of Mapped Lithologic Units