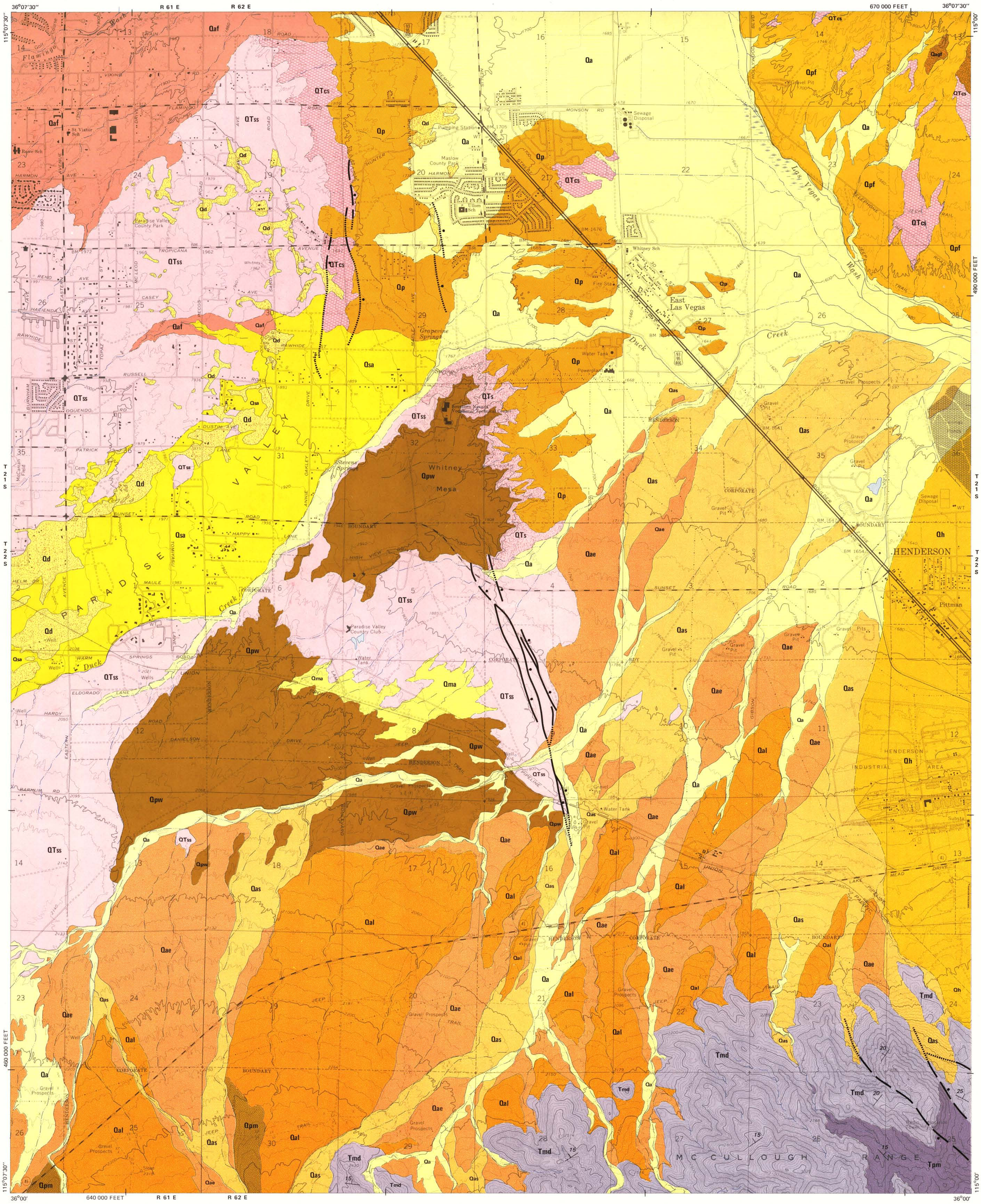
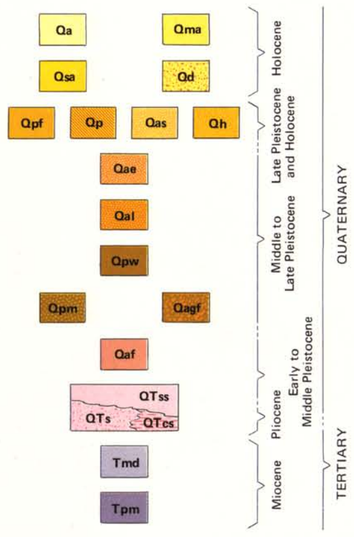


LAS VEGAS SERIES ✧ LAS VEGAS AREA

LAS VEGAS SE FOLIO ✧ GEOLOGIC MAP



Qa **Alluvium.** Thin alluvial deposits of uncemented and unweathered cobble to small pebble gravel, gravelly sand, sand, and silt. Locally cemented in modern washes by calcite cement. Las Vegas Wash: Pinkish-brown to pale-pink fine sand and pebbly fine sand with a surface crust of powdery white sulfate mineral.

Qma **Mesa Alluvium.** Thin, sheetlike deposits of gypsiferous, pale grayish-white to pale-pink, pebbly fine sand locally reworked from Qpw.

Qd **Sand Dunes.** Stable sand dunes and small dune fields composed of loose, well-sorted, pale yellowish-tan, fine quartz sand.

Qsa **Sandy Alluvium of Paradise Valley.** Thin deposits of unconsolidated, well-sorted, pale-pink to yellowish-tan, fine quartz sand and pebbly sand. Principally wind deposited; locally reworked by intermittent stream and sheet flow. Locally well cemented by calcite caliche in modern washes.

Qpf **Pediment Gravel of Frenchman Mountain.** Very thin deposits of pale-brown, grayish-brown, and pale yellowish-brown, locally gypsiferous, muddy pebbly gravel. Mostly subangular fragments of limestone and chert derived from Paleozoic bedrock of Frenchman Mountain. Surface of the gravel is marked by a lag of deeply etched limestone clasts.

Qh **Henderson Fan Deposits.** Moderately well-sorted, unconsolidated, gray to pinkish-gray, medium pebble gravel composed almost entirely of gray, friable, sparsely porphyritic andesite. Well bedded near Duck Wash. Weakly weathered; discontinuous horizons moderately cemented by calcium carbonate caliche.

Qas **Alluvial Deposits of Sunset Road.** Thin deposits of unconsolidated and weakly bedded bouldery small-pebble gravel and muddy sandy gravel composed of about equal amounts of bluish-gray to greenish-gray andesite and dark-gray vesicular basalt; most clasts subrounded to subangular. Calcium carbonate caliche sparse to absent. Surface of the deposits marked by undisturbed "bar and channel" microtopography with weak desert varnish on surface clasts.

Qp **Pediment Deposits of East Las Vegas.** Thin pediment and colluvial deposits of pale pinkish-tan silt, sand, and pebbly sand containing reworked calcium carbonate caliche nodules, limestone, and volcanic rock fragments. Well bedded and locally well cemented with calcium carbonate caliche west of Whitney School.

Qae **Alluvial Deposits of Eastern Avenue.** Boulder to cobble sandy gravel and pebbly cobble gravel composed of gray to brown and light bluish-gray andesite, basalt, and limestone clasts. Weakly bedded and poorly sorted. Well-developed petrocalcic horizon at or near the top of the deposits. Caliche rinds weakly to moderately developed on individual clasts. Surface of the deposits marked by subdued "bar and channel" microtopography, a dense lag of boulder- and cobble-size volcanic clasts with distinct desert varnish, and scattered, nearly circular accumulations (aureoles) of pebble-size fragments of caliche.

Qal **Alluvial Deposits of Lamb Boulevard.** Large boulder to cobble sandy gravel composed of greenish-brown, gray, and light bluish-gray andesite and basaltic andesite. Average clast size greater than in Qae. Very well-developed petrocalcic horizon greater than 1 m thick near or at the top of the deposits; many individual clasts are rimmed with caliche rinds about 1 cm thick. Where not eroded, surface of the deposits marked by very subdued "bar and channel" microtopography, numerous pebble-size fragments of caliche, and a moderately dense to sparse surface lag of gravel clasts with well-developed desert varnish.

Qpw **Pediment Deposits of Whitney Mesa.** Light-tan to pale brownish-white gravelly fine sand to sandy gravel composed dominantly of quartz sand and silt reworked from older, immediately underlying beds. Surface of the deposits marked by a lag veneer of small boulder- to pebble-size, rounded clasts of andesite and basalt with distinct desert varnish. Deposits contain "sugary" pedogenic gypsum throughout and are locally well cemented by very fine-grained pedogenic calcite.

Qagf **Alluvial Gravel of Frenchman Mountain.** Moderately well-sorted, weakly cemented small cobble gravel composed of abundant angular to subangular fragments of Paleozoic limestone and sparse sandstone.

Qpm **Pediment Gravel of the McCullough Range.** Bouldery cobble to pebble sandy gravel composed of greenish-brown, gray, and bluish-gray andesite and basalt. Surface of the deposits underlain by several-metre thick petrocalcic zone and characteristically littered with white to gray-white, porous petrocalcic fragments; rare volcanic clasts at the surface have well-developed desert varnish.

Qaf **Alluvium of Flamingo Wash.** Loose to weakly cemented pale pinkish-tan silt, fine sand, and pebbly sand reworked from underlying Plio-Pleistocene beds. Includes very thin and discontinuous pebbly stringers of Paleozoic limestone pebbles and abraded, transported fragments of nodular calcium carbonate caliche fragments. "Sugary", probably pedogenic, gypsum common.

QTss **Plio-Pleistocene Silty Sand. QTss:** Weakly medium-bedded, white, pale
QTs pinkish-white to very pale-tan, silty fine sand containing discontinuous
QTcs horizons of close-packed, nodular calcium carbonate caliche fragments that grade laterally into dense and very hard, massive, gray-white petrocalcic "beds". Gypsum sparse to absent. In part equivalent to the Las Vegas Fm. of Longwell and others (1965). **QTs:** Weakly bedded, pale-yellowish to pale yellowish-brown silt exposed in the east face of Whitney Mesa. Intertongues upward with thin, gray to pale grayish-brown pebble beds containing volcanic clasts. Grades laterally and downward into QTcs. Contains sparse, diffuse horizons of nodular calcium carbonate caliche. Selenite crystals common. Equivalent in part to the Muddy Creek Fm. **QTcs:** Weakly to prominently thin- to medium-bedded, variegated pale-red and pale-green to grayish-green, interbedded silty clay and clayey silt. Selenite plates and "sugary" gypsum common throughout. Equivalent to the Muddy Creek Fm.

Tmd **Mount Davis Volcanics.** Blocky-weathering glassy flows, largely devitrified, of dark-brown to dark-gray biotite andesite interbedded with minor volcani-clastic sediment and thin subordinate flows of basalt. Outcrops generally form steep cliffs.

Tpm **Patsy Mine Volcanics.** Thin flows (<20 m), commonly vesicular, of dark- to light-gray and tan porphyritic andesite interbedded with thin lenses of fluvial and eolian andesitic sand and gravelly sand. Weathers to form light-gray and greenish-gray to reddish-tan subdued slopes. Unit includes local, small andesite plugs equivalent in age to some of the flows.

Contact. Dashed where approximately located.

Fault. Dashed where approximately located; dotted where concealed. Ball on downthrown side.

15 **Bedding.**

E. C. Bingler, 1977

Scale 1:24,000

0 0.5 1 KILOMETER
0 1000 METERS

0 0.5 1 MILE
0 2000 4000 FEET

CONTOUR INTERVAL 20 FEET
DOTTED LINES ARE 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

Topographic base from U. S. Geological Survey Las Vegas SE 7½' quadrangle, 1967.

Cartography by Susan L. Nichols.

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