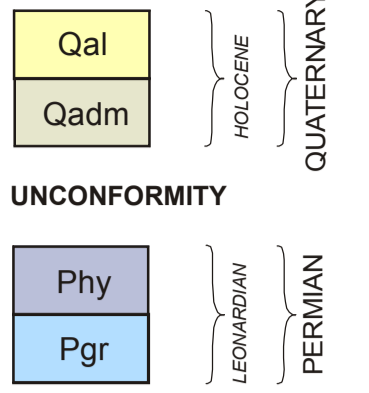


CORRELATION OF MAP UNITS

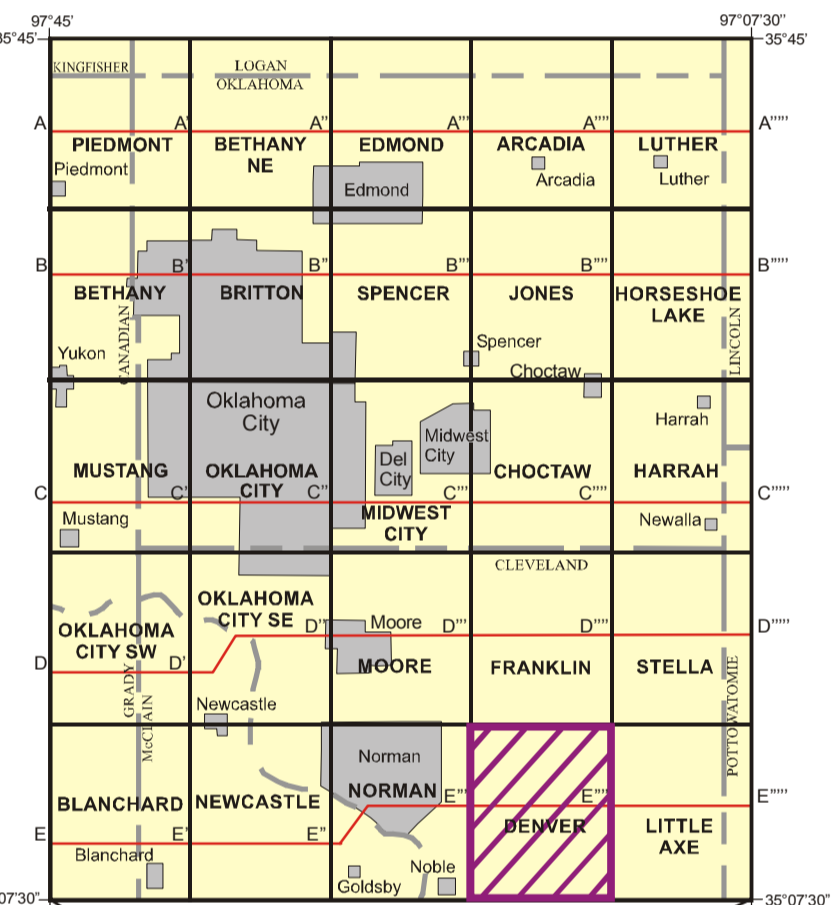


DESCRIPTION OF UNITS

- Qal** ALLUVIUM (Holocene)—Clay, silt, sand, and gravel in channels and on flood plains of modern streams. Includes terrace deposits of similar composition located directly above and adjacent to modern channels and flood plains. Thickness: 0 to about 30 ft
- Qadm** ALLUVIUM OF DAVE BLUE CREEK (Holocene)—Clay, silt, sand, and gravel on recent flood plain of Dave Blue Creek about 5-10 ft above most recent alluvial valley. Areas periodically subject to flooding. Thickness: unknown, possibly as much as 20 ft
- Phyl** HENNESSEY FORMATION (Permian)—Mostly a poorly exposed, moderate reddish brown (10R4/6), moderate red (5R4/6), to moderate reddish orange (10R6/6) muddy siltstone, silty shale, with minor very fine grained sandstone; locally with conspicuous light greenish gray (5GY8/1) to pale green (10G6/2) iron-reduction spots and bands. Spots average 1/4 in. in diameter, found throughout unit; bands usually oriented sub-parallel to bedding and are more common in lower third of unit. Minor lenticular beds of very fine grained sandstone and siltstone-pebble conglomerate also occur, with conglomerates common in basal half, rare in upper half. Siltstone moderately to well stratified with thin to laminated trough-stratification and/or ripple-marks; typically weathers to bench- and slope-topography, particularly common in basal 30 ft of formation. Locally, sandstone cross-stratified, but rarely forming channel deposits. Siltstone and sandstone exhibit platy to flaggy weathering, muddy soil. Contact with underlying Garber Formation placed at top of highest mappable fine- to medium-grained Garber sandstone bed. Thickness: only lower 80 ft of formation exposed in map area
- Pgr** GARBER FORMATION (Permian)—Sandstone, mostly fine-grained to less commonly very fine to medium-fine-grained; appears to be very fine grained near base; moderate reddish brown (10R4/6), moderate reddish red (10R6/6), moderate red (5R5/4), light brown (5YR5/6), and dark yellowish orange (10YR5/6); minor siltstone, shale, and siltstone-pebble conglomerate. Sandstone typically porous and friable; commonly weathers to smooth, rounded outcrops; locally with platy to flaggy to rarely slabby appearance. Locally, weathers to hard, dark-colored (grayish black (N2)) beds completely cemented with hematite, calcite, barite, and/or rarely silica. Dark-colored sandstone blocks locally form lag deposit over weathered outcrops. Large- and small-scale planar crossbeds and trough crossbeds common; many outcrops characterized by inclined beds and channelform deposits, although plane-parallel stratification also present. A fairly widespread moderate red (5R5/4) to pale red (5R6/2), 2- to 3-ft-thick conglomerate bed occurs within 15 ft of the top of the formation. The bed consists of pebble-size siltstone and shale clasts, rarely dolomite and limestone clasts set in a medium- to coarse-grained sandstone matrix. Sandstone locally color-banded (e.g., moderate reddish brown (10R4/6), grayish red purple (5RP4/2), and grayish yellow green (5GY7/2)) or with mottled appearance. Small calcareous and iron-oxide spherules occur locally on weathered surfaces. Circular iron-reduction spots very rare, except in uppermost 10 to 20 ft near contact with Hennessey Formation. Siltstone and shale very sandy, color-banded (e.g., moderate reddish brown (10R4/6) and yellowish gray (5Y7/2)), stratified to unstratified, and with uncommon iron-reduction spots as large as 2 in. in diameter. Siltstone with minor shale common near top of formation. In places, siltstone and shale contain evidence of paleosol development such as blocky weathering, fractures with surficial markings by small slickensides, through-going curved fractures, and calcare deposits. Thickness: about 1030 ft based on cross-section; basal 970 ft not exposed in map area

SYMBOLS

- Unit contact; dashed where approximate
- Mappable bed of conglomerate
- x Outcrop, geologic observation
- Outcrop, bearing of paleocurrent direction
- Barite nodules
- Petroleum well. Includes oil, gas, oil and gas, dry service (water supply or injection), junked and abandoned, unknown. Modified from Natural Resources Information System database

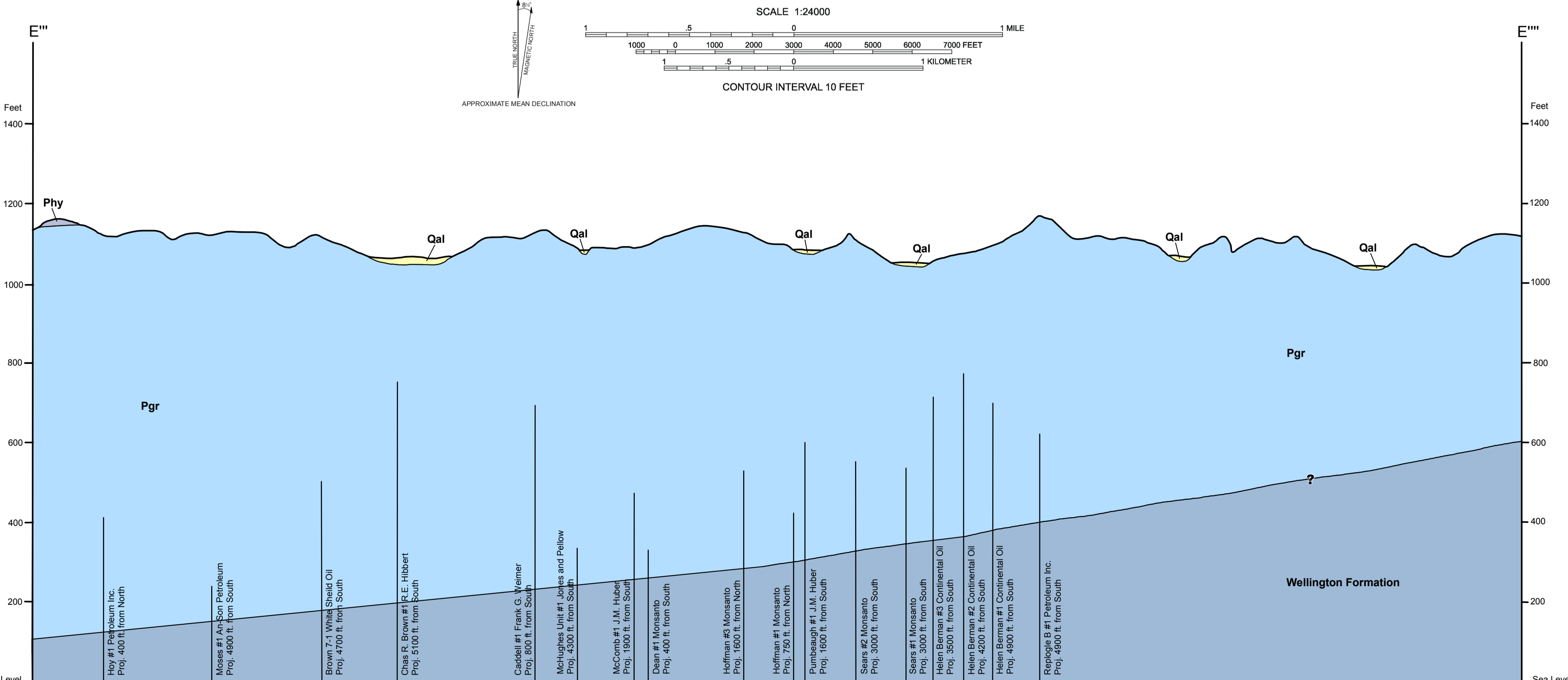


EXPLANATION

- Current Map
- Mapped Quadrangles
- Major Cities
- Existing Suburbs and Communities

Base Map Credits
The base map was compiled by the U.S. Geological Survey and planimetry revised from aerial photographs taken 1957, from checker 1958. Revised from aerial photographs taken 1959 and 1975. Universal Transverse Mercator (UTM) projection, 1927 North American Datum, 10,000-foot grid scale based on Oklahoma coordinate system, south zone, 1,000-meter UTM grid, zone 14.

Geologic Map Credits
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GEOLOGIC MAP OF THE DENVER 7.5' QUADRANGLE, CLEVELAND COUNTY, OKLAHOMA
Thomas M. Stanley and Galen W. Miller
2002