OKLAHOMA GEOLOGICAL SURVEY
Charles J. Mankin, *Director*

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Oklahoma Geologic Quadrangle **OGQ-38**
Geologic Map of the Oklahoma City 7.5′ Quadrangle
(previously Open-File Report OF11-2003)

CORRELATION OF MAP UNITS

Qal	Qacy		
	Qacm	HOLOCENE	QUATERNARY
Qgco	Qds	PLEISTOCENE	
	Qcs		
UNCONFORMITY			
Phy		LEONARDIAN	PERMIAN
Pgr			

DESCRIPTION OF UNITS

Qal ALLUVIUM (Holocene)–Clay, silt, sand, and gravel in channels and on flood plains of modern streams. Thickness: 0 to about 25 ft

Qacy ALLUVIUM OF NORTH CANADIAN RIVER (Holocene)–Clay, silt, sand, and gravel in channels and on flood plain of North Canadian River. Area probably subject to frequent flooding. Thickness: generally 0 to 40 ft; rarely more than 40 ft

Qacm ALLUVIUM OF NORTH CANADIAN RIVER (Holocene)–Clay, silt, sand, and gravel on Recent flood plain of Canadian River about 5 to 10 ft above Qacy. Area rarely subject to flooding. Thickness: unknown, possibly as much as 50 ft

Qds DUNE SAND (Holocene and Pleistocene?)–Fine- to coarse-grained, moderately to poorly sorted sand. Consists mainly of rounded to subrounded quartz grains, with some silt and clay-size material. Probably represents eolian reworking of Pleistocene terrace deposit Qgco. Dunes best seen east of Lake Overholser in S1/2 sec. 21, T. 12 N., R. 4W. Thickness: 0 to 50 ft

Qcs COVER SAND (Pleistocene)–Poorly sorted fine-grained sand and silt with some clay-size material. Forms extensive, almost flat surfaces 50 or more feet above Canadian River. Thickness: generally 5 to 10 ft, rarely as much as 50 ft

Qgco REMNANTS OF OLDER TERRACE DEPOSITS (Pleistocene)–Clay, silt, sand, and gravel adjacent to the flood plain of the North Canadian River. Sand commonly is medium- to coarse-grained and very light colored; gravel locally consists of concentrations of distally derived pebbles and cobbles, mostly subrounded quartz and quartzite. Base of unit varies from 0 to 25 ft above the modern flood plain of the North Canadian River and ranges in elevation to about 1240 to 1275 ft above sea level. The top of the unit is as much as 70 ft above the modern flood plain and is as high as 1310 ft above sea level. Thickness: 0 to 60 ft

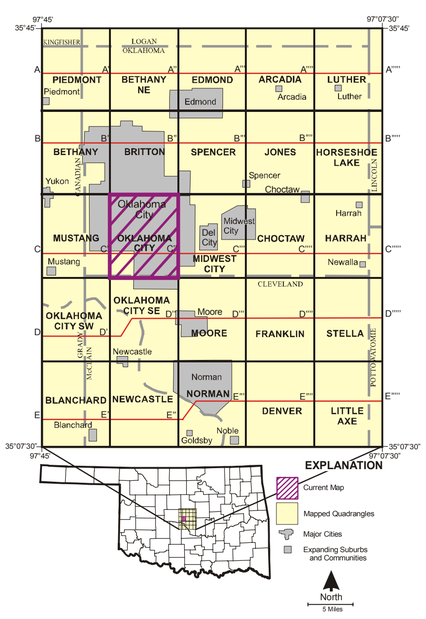
Phy HENNESSEY FORMATION (Permian)–Muddy siltstone, silty shale, and minor very fine-grained sandstone, mostly moderate reddish brown (10R4/6) to light brown (5YR5/6), locally banded with yellowish gray (5Y7/2) and light greenish gray (5GY8/1) beds. Very poorly exposed in urban areas, poorly exposed in rural areas. Contains common iron-reduction spots, light greenish gray (5GY6/1 to 5GY8/1) to pale green (10G6/2) to very pale green (10G8/2), as large as 5 in. in diameter, and bands the same color subparallel to bedding. Shale typically unstratified and highly fractured to fissile; rarely with small-scale slickensides that are evidence of paleosol development. Siltstone moderately to well stratified. Sandstone locally cross-stratified on large and small scale, uncommonly trough-cross-stratified and/or ripple marked. Trace fossils and shale rip-up clasts very rare. Sandstone rarely forms channelform deposits. Shale outcrops locally weather to blocky, very fractured, or "hackly" appearance; form bare, rounded outcrops. In other places, shale weathers to muddy soil with abundant small calcareous nodules. Calcite veinlets uncommon. Siltstone and sandstone exhibit platy to flaggy weathering.

Contact with underlying Garber Formation placed at top of highest mappable fine- to medium-grained sandstone. Thickness: about 420 ft, top not exposed

Pgr GARBER FORMATION (Permian)–Sandstone, fine-grained to very fine grained, less commonly medium-fine-grained, moderate reddish brown (10R4/6) to yellowish gray (5Y8/1); less common siltstone, shale, and siltstone conglomerate. Sandstone generally porous and friable; less commonly cemented by hematite, calcite, and/or silica. Large- and small-scale cross-bedding and trough cross-bedding common; bedding planes in outcrops typically inclined. Less commonly parallel- or wavy-bedded. Iron-reduction spots extremely rare, although sandstone locally has banded appearance. Weathers to slabs, flagstones, or thin plates. Siltstone and shale sandy, locally with iron-reduction spots and/or bands. Siltstone and shale appear to be more common near top of formation. Thickness: about 90 ft, base not exposed

SYMBOLS

- Unit contact; dashed where approximate
- Scarp in alluvium of North Canadian River
- Outcrop, geologic observation
- 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
- Municipal water well
- Shallow bore hole, based on reports filed with Oklahoma Water Resources Board. Holes are approximately located



Base Map Credits

The base map was compiled by the U.S. Geological Survey by photogrammetric methods from aerial photographs taken 1954. Planimetry derived from imagery taken 1995 and other sources. Universal Transverse Mercator (UTM) projection. 1983 North American Datum. 10,000-foot grid ticks based on Oklahoma coordinate system, north and south zones. 1,000-meter UTM grid, zone 14.

Geologic Map Credits

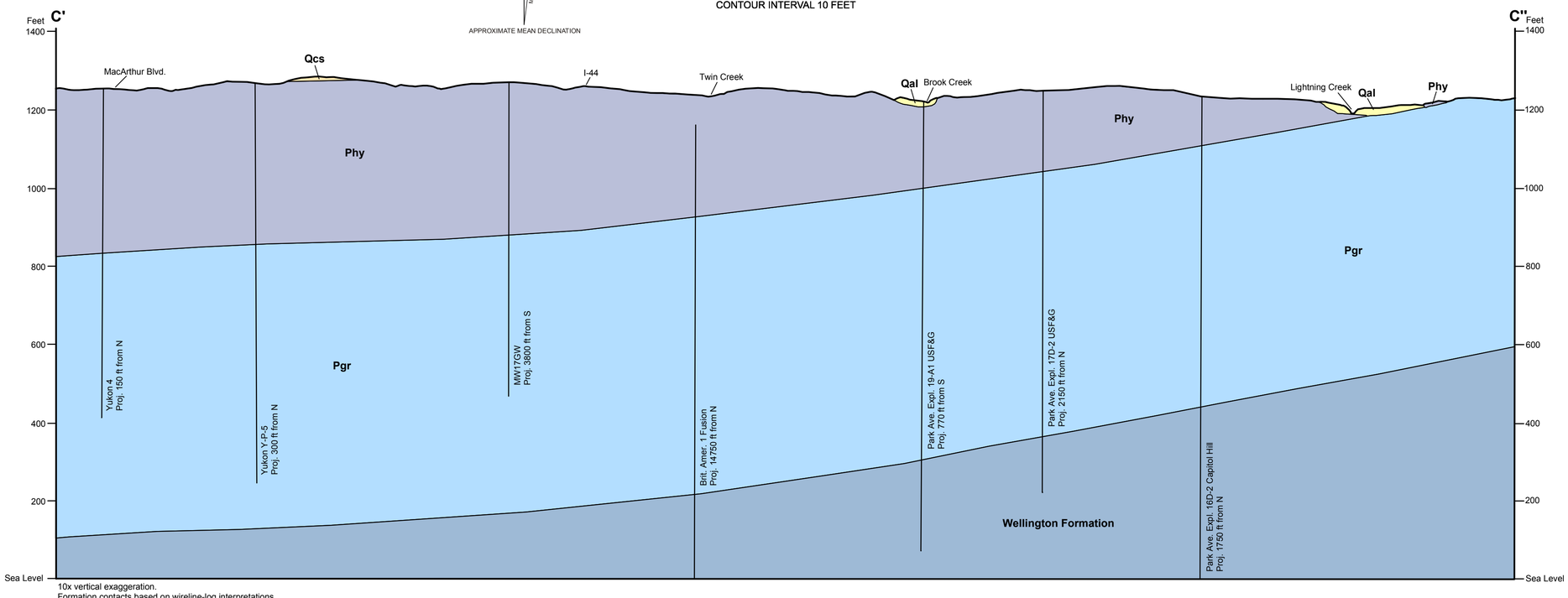
Geology by Neil H. Suneson and Thomas M. Stanley, 1999-2000. Research supported by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under Assistance Award Number 99HQAG0137. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. Published originally as Open-File Report 3-2000 as an author-prepared, black-and-white paper map. Digitally reproduced in color as Open-File Report OF11-2003. Map revised and published as OGQ-38. Cartography and layout prepared by G. Russell Standridge, 2002.

SCALE 1:24000

1 .5 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

APPROXIMATE MEAN DECLINATION 6°E (TRUE NORTH / MAGNETIC NORTH)



10x vertical exaggeration.
Formation contacts based on wireline-log interpretations by N.H. Suneson and surface mapping by the authors.
Vertical lines show logs used in interpretations.

GEOLOGIC MAP OF THE OKLAHOMA CITY 7.5′ QUADRANGLE, OKLAHOMA AND CLEVELAND COUNTIES, OKLAHOMA

Neil H. Suneson and Thomas M. Stanley

2000