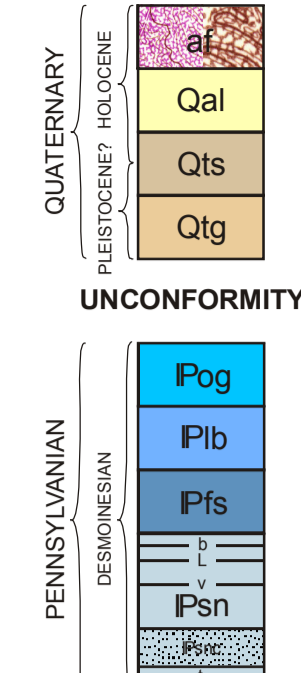


CORRELATION OF MAP UNITS

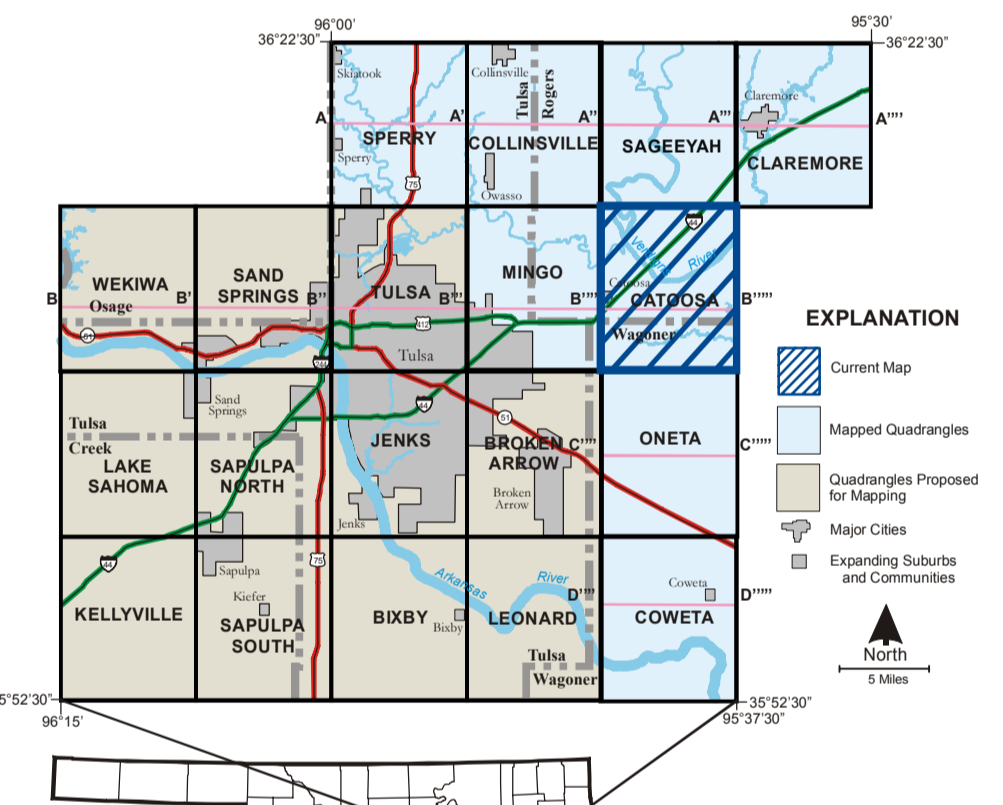


DESCRIPTION OF UNITS*

- ARTIFICIAL FILL (Holocene)** - Natural or artificial talus, slumps, and tailings covering formally exposed areas around active and inactive mining operations.
- 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.
- Qts** **UPPER TERRACE SANDS (Holocene and Pleistocene?)** - Consists mostly of unconsolidated fine- to medium-grained quartz sand, silt, and clay; little to no gravel-sized material observed. Situated just above modern flood plains and drainages. Thickness: 0 ft to as much as 20 ft; averages closer to 8 ft thick.
- Qtg** **TERRACE GRAVELS (Pleistocene?)** - Concentrations of locally and distally derived sediment, moderately indurated and whole-fossil, silty mudstones and wackestones; bedding varies between 1"-16" thick, with thicker beds more common at the base of formation. Fossils dominated by numerous species of brachiopod, phylloid algal, and crinoid debris; fenestrate and ramose bryozoans present in thicker beds, while bivalve-filled burrows also common in some sections with a large complement of argillaceous limestone. The upper half of exposed Oologah tends to be more regular, thin-bedded, slightly argillaceous, fossiliferous mudstones; bedding planar to slightly wavy, ranging from 2"-5" thick; fossils similar to lower part, except less of a phylloid algal content. The Anna Shale and underlying Childers School Member were not observed in the quadrangle. Only lower 50 to 60 ft of the Oologah Formation exposed in quad.
- Pog** **OOLOGAH FORMATION (Pennsylvanian, Desmoinesian)** - Limestone characterized by a medium gray (N5) to medium dark gray, medium bluish gray (S5S1), to locally yellowish gray (S7T2), thin- to medium bedded, wavy, skeletal and whole-fossil, silty mudstones and wackestones; bedding varies between 1"-16" thick, with thicker beds more common at the base of formation. Fossils dominated by numerous species of brachiopod, phylloid algal, and crinoid debris; fenestrate and ramose bryozoans present in thicker beds, while bivalve-filled burrows also common in some sections with a large complement of argillaceous limestone. The upper half of exposed Oologah tends to be more regular, thin-bedded, slightly argillaceous, fossiliferous mudstones; bedding planar to slightly wavy, ranging from 2"-5" thick; fossils similar to lower part, except less of a phylloid algal content. The Anna Shale and underlying Childers School Member were not observed in the quadrangle. Only lower 50 to 60 ft of the Oologah Formation exposed in quad.
- Pib** **LABETTE FORMATION (Pennsylvanian, Desmoinesian)** - Medium light gray (N6) to dusky yellow (S5T4), occasionally light olive gray (S5S2), laminated, very silty to sandy, micaceous, concretionary clayshale; concretions dusky red (S5R4) to moderate red (S5R5), composed of hematite and/or siderite(?), and usually occur sporadically throughout formation as 1"-3" diameter discoid-shaped clasts. Clayshales predominantly non-calcareous, although some narrow horizons are weakly calcareous (particularly those associated with abundant concretions). Locally, various non-descript very sandy shale or sandstone horizons occur; mostly these sand horizons are planar laminated to thin-bedded. Overall, formation becomes increasingly silty and sandy toward the top. Within the upper 50 ft of the formation a sequence of interbedded sandstones and shales (Peru sandstones). The Peru sandstones consist of between 2 to 4 intervals of dusky yellow (S5T4), moderately indurated, thin- to medium-rough-cross-bedded, fine-grained, non-calcareous sandstones, sandstone intervals vary between 5 to as much as 15 ft thick, where the thicker intervals have been variably termed the Upper and Lower Peru sandstones by previous investigations. Each sandstone separated by 7 to 10 ft thick interval of well-laminated, tuff-bedded, calcareous, interbedded mudshale and siltstone. The Sageahy limestone was not observed in this quadrangle. Formation about 220 ft thick.
- Pfs** **FORT SCOTT FORMATION (Pennsylvanian, Desmoinesian)** - In the Catoosa Quadrangle the formation consists of only two members, in descending order: 1) the Little Osage Shale, and 2) the Blackjack Creek Limestone. Thickness of the formation is about 7 to 12 ft, averaging closer to 10 ft thick. Little Osage Shale: Similar to the Exocelo Shale of the Senora Formation, a medium dark gray (N4) to dark gray (N3), well-laminated to fissile, phosphatic clayshale; upper 5'-8' light brownish gray (S5R6/1), blocky-bedded, silty, calcareous, fossiliferous clayshale. Phosphate nodules throughout lower part of member, occurring as 0.25-0.5" ovoid-shaped clasts. Thickness usually 5 ft, but may be as thin as 2 ft thick locally. Blackjack Creek Limestone: Light gray (N7), medium light gray (N6), light brownish gray (S5R6/1), to moderate orange pink (S5R8/4), thin, planar to wavy bedded, skeletal to whole-fossil wackestone. Bedding varies from 2" to 5" thick; wavy bedding contacts due in part to stromatolitic bedding; limestone in upper 1-3 ft of member exhibiting wavy laminated bedding and more fragmentary bioclasts compared to lower parts of member. Member dominated by spirifer and productid brachiopods, and crinoid debris, algae and fusulinids common in some intervals. Thickness from 5 to 10 ft, averaging close to 7 ft.

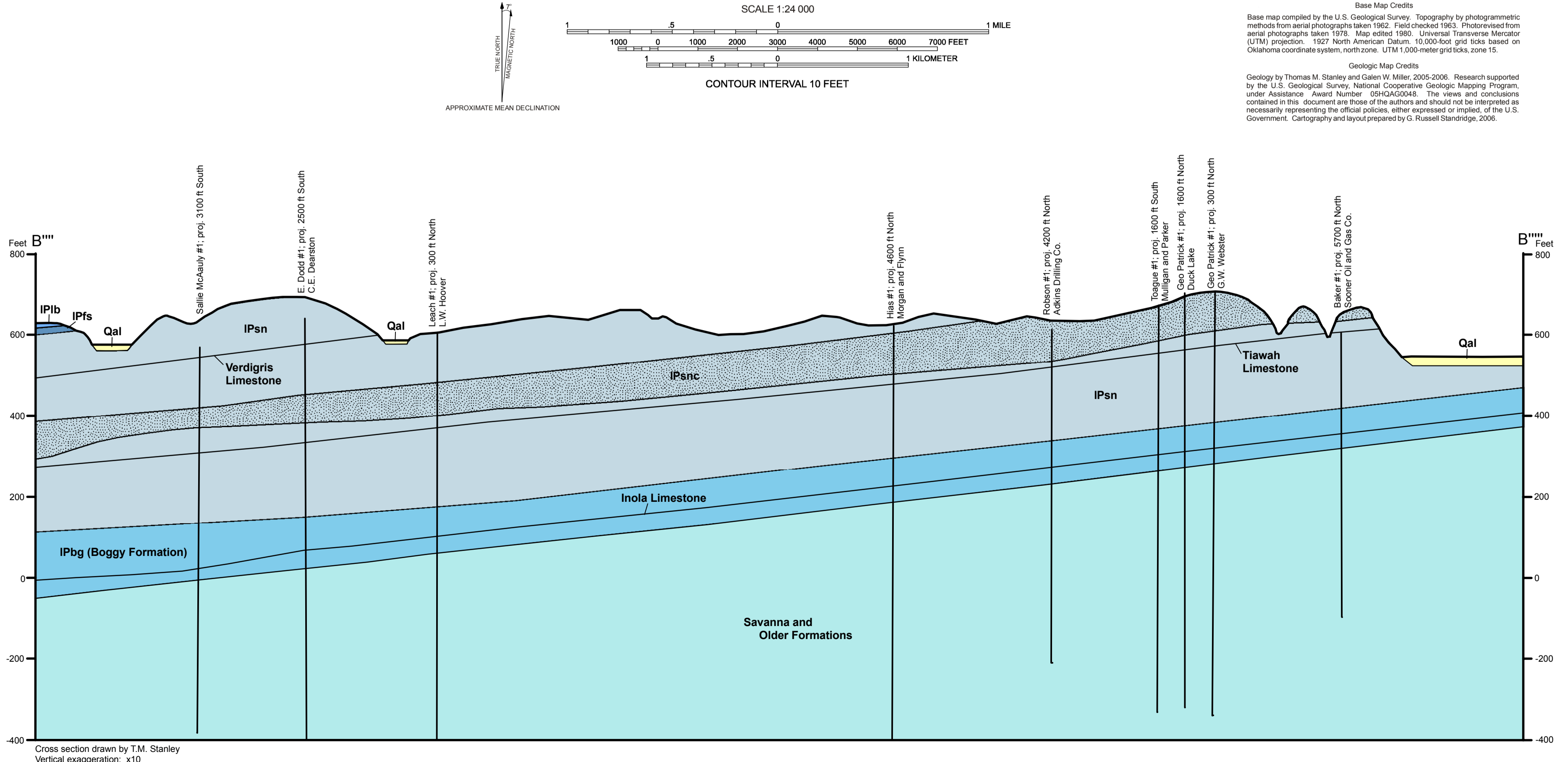
SYMBOLS

- Unit contact; dashed where approximate
- x 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



GEOLOGIC MAP OF THE CATOOSA 7.5' QUADRANGLE, ROGERS AND WAGONER COUNTIES, OKLAHOMA

Thomas M. Stanley and Galen W. Miller
2006



Base Map Credits
Base map compiled by the U.S. Geological Survey. Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1983. Photorevised from aerial photographs taken 1978. Map edited 1980. Universal Transverse Mercator (UTM) projection. 1927 North American Datum. 10,000-foot grid ticks based on Clarke's coordinate system, north zone. UTM 15Q UTM zone 15.

Geologic Map Credits
Geology by Thomas M. Stanley and Galen W. Miller, 2005-2006. Research supported by the U.S. Geological Survey National Cooperative Geologic Mapping Program, under Assistance Award Number G0420044. 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. Cartography and layout prepared by C. Russell Standridge, 2006.

*Detailed descriptions only include mappable units observed in the field. Formal member and bed names are indicated by capitalization (i.e., Chelsea Sandstone), while informal names are given in lowercase (i.e., Peru sandstone). Color of units based on fresh surfaces, unless stated otherwise.