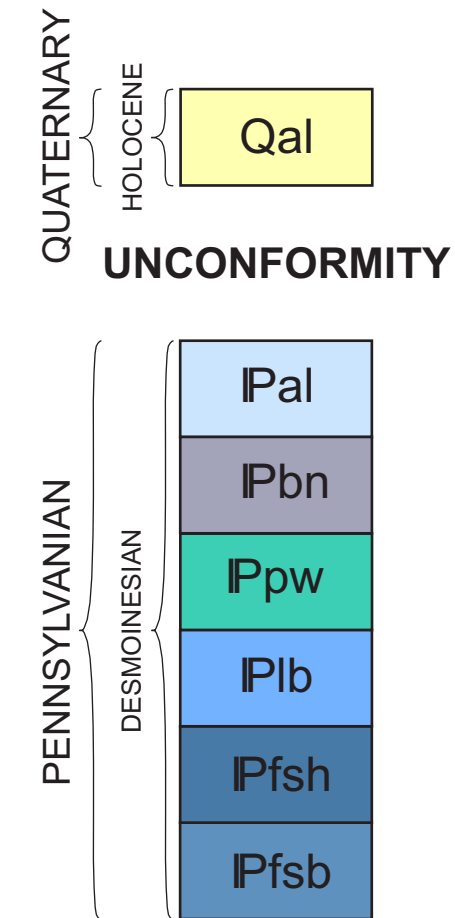




Oklahoma Geologic Quadrangle OGG-105
Geologic Map of the Hollow 7.5' Quadrangle

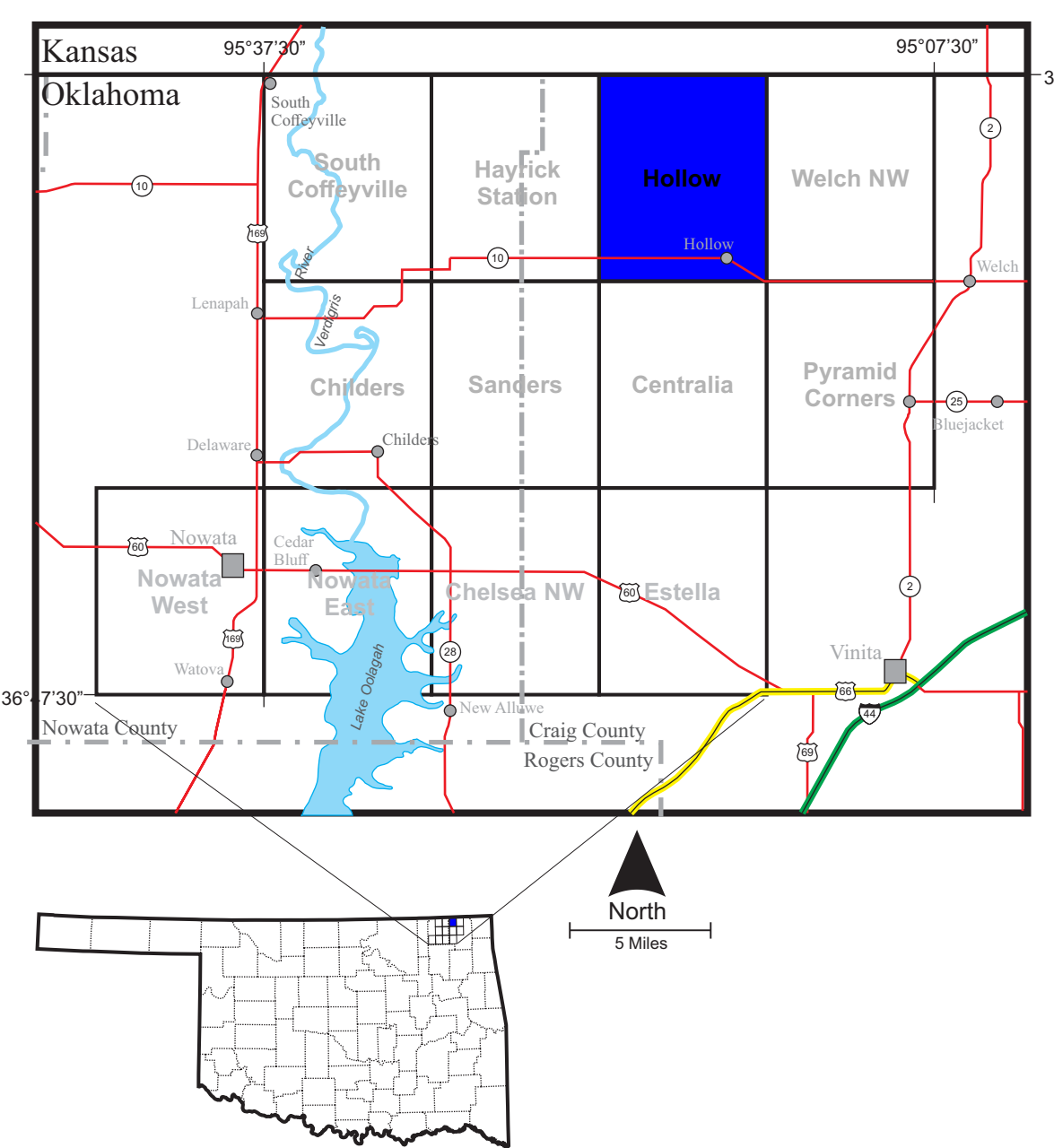


DESCRIPTION OF UNITS*

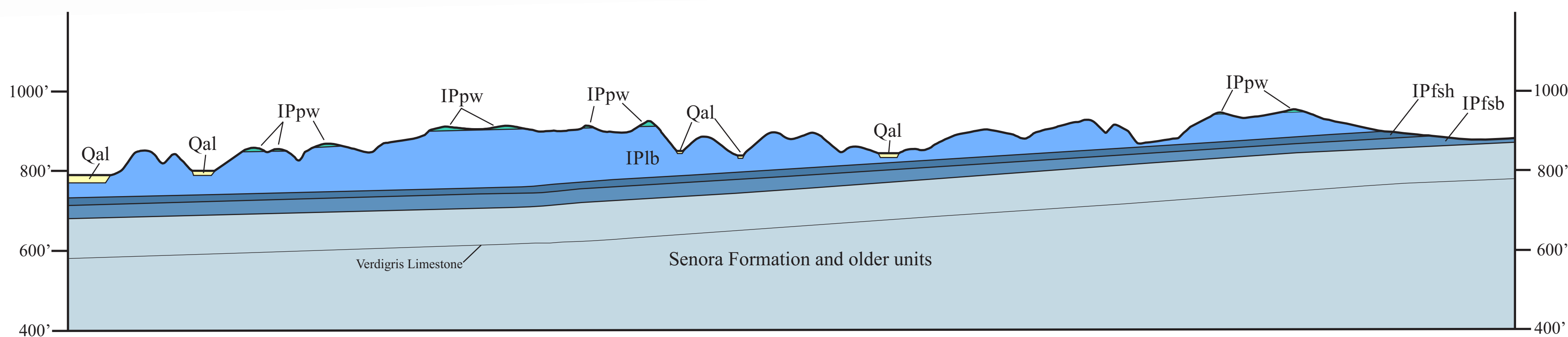
- | | |
|------|---|
| Qal | ALLUVIUM (Holocene) - Clay, silt, sand, and gravel in channels and on flood plains of modern streams. Includes terrace deposits of similar composition located directly above and adjacent to modern channels and flood plains. Thickness: 0 to about 40 ft. |
| Pla | ALAMONT FORMATION (Pennsylvanian, Desmoinesian) - Consists of three members in descending order: the upper Worland Limestone, the Lake Noshoe Shale, and the basal Anoreet Limestone. Only the upper Worland Limestone is observed. The middle member is a medium gray (N5) at top to a medium light gray (N6) toward base; texture predominated by a slightly argillaceous skeletal mudstone with thin, medium dark gray (N4) clayshale partings that average around 2" thick. Near the top of the member, coarsely crystalline limestone textures occur locally. Thickness about 7 ft, top erosional. |
| Pbn | BANDERA SHALE (Pennsylvanian, Desmoinesian) - Predominantly a medium dark gray (N5) where fresh, grayish orange pink (5R/2) where weathered, micaceous, slightly sandy clayshale at top, grading into a claystone at base. At about 15 ft. below the top of the formation is a more interbedded sand and shale interval which may correspond to the Bandera Quarry Sandstone. Interval varies from 5 to 10 to 10" thick. Total thickness of the formation about 120 ft. |
| Pow | PAWNEE FORMATION (Pennsylvanian, Desmoinesian) - Includes, in descending order, the Coal City Limestone, Mine Creek Shale, and the Myrick Station Limestone. The Coal City Limestone is a light gray (N7) fresh to light brownish gray (5R/2) weathered, irregularly bedded medium crystalline limestone with local interbeds of carbonate mudstone texture. Thickness about 20 ft. The Mine Creek Shale member consists of a dark gray (N3) platy to fissile laminated, slightly phosphatic and argillaceous clayshale with thin, medium gray (N4) claystone, very fine-grained sandstone to 10 ft. thick medium light gray (N6) to light gray (N7), unbedded, skeletal mudstone to locally a coarse crystalline limestone. Fossil fragments mostly consist of crinoid debris, and associated with brachiopod fragments. Lower contact sharp but wavy. Total thickness of the formation varies from 35 to 40 ft. |
| Ppb | LABETTE SHALE (Pennsylvanian, Desmoinesian) - Light olive gray (5Y/5.2) to dusky olive (5Y6/4), massive to medium bedded (N6), laminated, friable, thin- to medium-, concretionary clayshale; concretions dusky red (5R/4.2) to moderate red (5R/5.4), composed of hematite and/or siderite(?), and usually occur sporadically throughout formation as 1-3" diameter discoidal-shaped clasts. Clayshale predominantly non-calcareous, although some narrow horizons are weakly calcareous (particularly in the upper part of the formation). Several conspicuous non-bedded, very sandy or sandstone horizons occur; mostly these sand horizons are planar laminated to thin-bedded, but one at 15 ft above base of the Labette is trough-cross-bedded. |
| Ppu | Near top of the Labette is a sandstone, sandy shale, and shale zone (Peru sandstone). Where present, the base of the Peru sandstone is about 17 ft below the top of the formation, consisting of 9-10 ft of dusky olive (5Y6/4), friable, thin- to medium-, trough-cross-bedded, fine-grained, non-calcareous, argillaceous sandstones, alternating every 6" or 8" with intervals consisting of well-laminated, calcareous, very fine-grained sandstone and shale, top of Peru to base of the Pawnee find typical siltly clayshale of the Labette. |
| Psh | A black fissile, phosphatic shale called the Anoreet Shale may occur locally above the Peru Sandstone through to the top of the Labette. Thickness of unit varies from 0 to 7 ft. |
| Psfb | In the map area the Labette Formation varies between 120 to 180 ft thick, but averages closer to 150 ft thick. |
| Psh | FORT SCOTT FORMATION (Pennsylvanian, Desmoinesian) - Unit is subdivided into two informal units for the purposes of mapping: a lower unit, IPshb, corresponding to the Blackjack Creek Limestone, and an upper unit, IPfsh that includes the Little Osga Shale and the Higginsville Limestone. |
| Psfb | The basal Blackjack Creek Limestone (IPfb) consists of light gray (N7) to medium light gray (N6), thin to medium, wavy bedded whole-fossil wackestones and mudstones. Bedding varies from 2" to as much as 16" thick with thicker bedded more frequent toward top of exposure. wavy bedding consists due (in part) to stratomatic bedding. Fossils dominated by spirifer and productid brachiopods, and crinoid debris; algae and fusulinids common in some intervals. Only about 5-8 ft. of interval is exposed in quad. |
| | The upper Higginsville interval (IPfsh) consists of the Higginsville Limestone proper at top and the Little Osga Shale at base. In the map area the Higginsville is poorly exposed and highly recessive generally, only observed as a series of discontinuous limestone beds and float nodules that occur on the steeper hill-sides. The Little Osga Shale is usually massive to thin bedded (5YR/4.2) to grayish orange (10YR/7.4), slightly argillaceous (locally cherty), shaly to claystone, most likely interbedded with calcareous shale. Thickness of interval varies from 40 ft to 55 ft. The Osga Shale is predominately a black fissile bedded, phosphatic shale that grades upward into a 5 to 7 ft. thick, thickly laminated, medium gray (N5) to medium light gray (N6) micaceous and calcareous clayshale. |
| | Overall the Fort Scott varies between 45 to 63 ft thick. |

SYMBOLS

x Outcrop; geologic observation



Produced by the Oklahoma Geological Survey. Geology by
Calra M. Eichler and Thomas M. Stanley, 2024-2025.
Research supported by the USGS, National Cooperative
Geologic Mapping Program, under G23AC00604. 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 prepared Thomas M.
Stanley and G. Russell Standridge, 2025.



Carla M. Eichler and Thomas M. Stanley
2025