



MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY
OPEN-FILE REPORT 29

GEOLOGIC MAP of the LAUDERDALE NW QUADRANGLE Kemper County, Mississippi



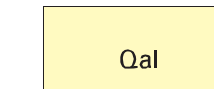
Geology by David E. Thompson

2001

DESCRIPTION OF MAP UNITS

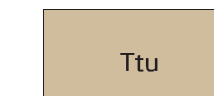
QUATERNARY
HOLOCENE

ALLUVIUM



Sand, flood plain sands and silts.

TUSCAHOMA FORMATION



Sand, dark greenish gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to coarse-grained, quartzose, micaceous, carbonaceous, glauconitic. Interbedded to interlaminated with clay and silt, light olive gray to brownish black, weathers to various shades of red, gray, brown, or white; lignite, contains Red Hills Mine equivalent lignite seams H through L. Total thickness is approximately 400 feet; however, the maximum thickness present in the quadrangle is about 250 feet in the southwest corner. The basal sandy interval constitutes the Middle Wilcox Aquifer.

An informal boundary which marks the top of the J seam, Red Hills mine equivalent. While the lignite seam is not always present, clay, silt, and lignite at that horizon are typically overlain by basal sands of the middle Tusahoma. The thickness of the J seam lignite, when present, is up to 4.5 feet. Middle Tusahoma beds, estimated at 160 feet thick, contain the Greggs and Bells Landing equivalent units from Alabama. The Lower Tusahoma beds, which contain lignite seams H through J along with the Middle Wilcox Aquifer, are estimated to be 130 feet thick.

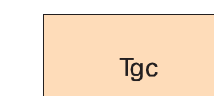
NANAFALIA FORMATION

Grampian Hills Member



Clay and silt, medium gray to pale green, weathers to various shades of red, brown, and gray, carbonaceous, lignitic, contains Red Hills Mine equivalent lignite seams C through G, interbedded to interlaminated with sand, dark greenish gray to medium gray, weathers reddish orange to pale yellowish orange, very fine- to medium-grained, quartzose, micaceous, carbonaceous, glauconitic. Basal portion is typically sandy. Thickness is 130 feet.

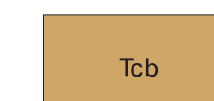
Gravel Creek Sand Member



Sand, medium gray to very light gray, weathers reddish orange to pale yellowish orange, very coarse- to fine-grained, typically fining upward, quartzose, micaceous, clay clast conglomerate; upper portion consists of clay, dark gray to light gray, typically dense, occasionally silty, carbonaceous to lignitic. Thickness is 80 to 110 feet. Unconformity at base. The basal sandy interval (along with the underlying Coal Bluff sand) constitutes the Lower Wilcox Aquifer.

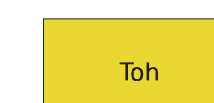
NAHEOLA FORMATION

Coal Bluff Member



Sand, dark gray to light gray, weathers pale yellowish orange to reddish orange, very fine- to very coarse-grained, sometimes pebbly, typically fining upward, quartzose, very micaceous, carbonaceous, clay clast conglomerate; interbedded to interlaminated with clay and silt, dark gray to light gray, carbonaceous, lignitic, especially argillaceous at the top. The lower sands may contain kaolinitic to bauxitic clay clasts or beds. The thickness is 70 to 80 feet. Unconformity at base. Along with the overlying Gravel Creek sand, constitutes the Lower Wilcox Aquifer.

Oak Hill Member

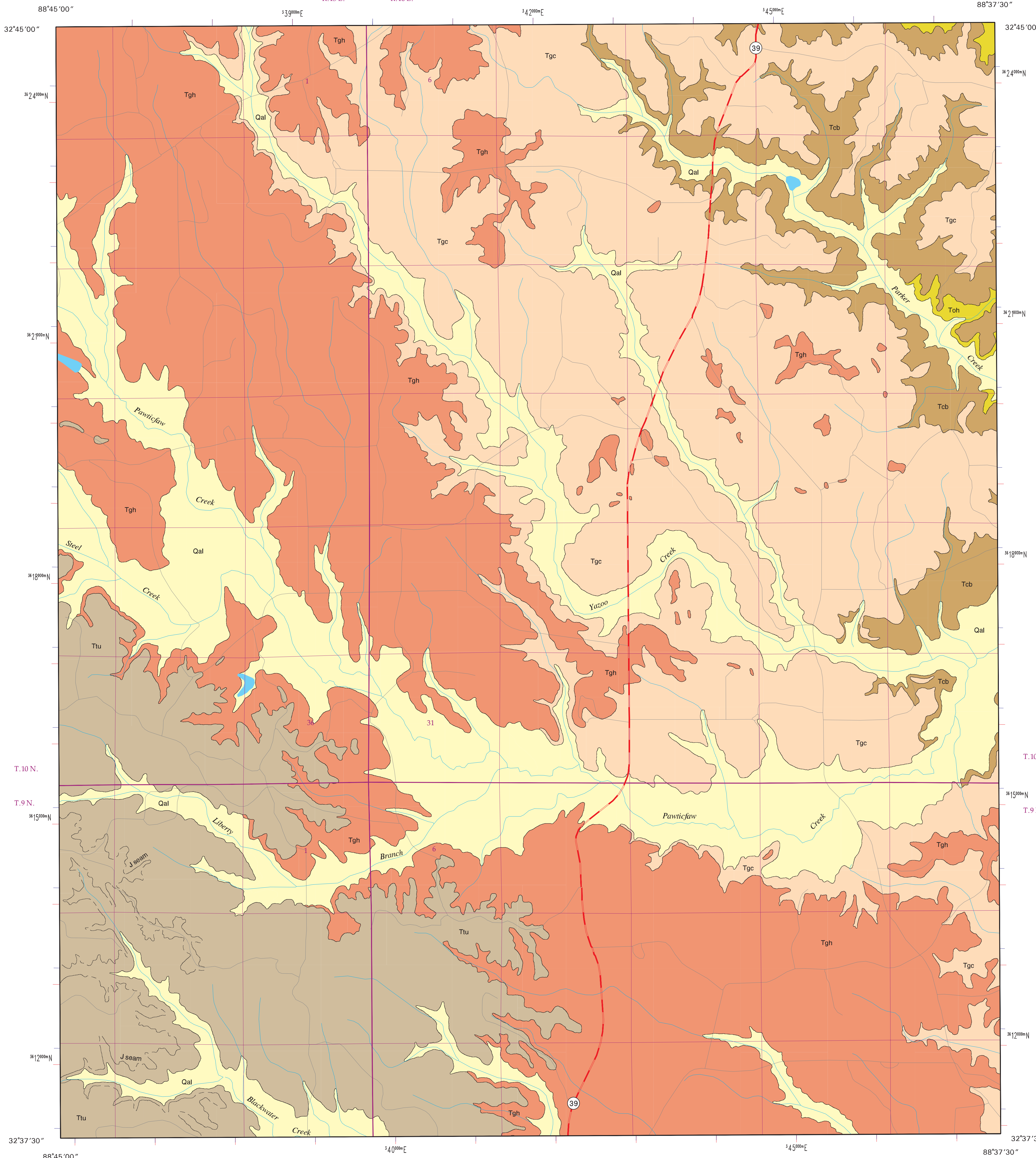


Clay, brownish black to medium gray, weathers grayish brown to white, silty, carbonaceous, lignitic, kaolinitic to bauxitic; interbedded to interlaminated with sand, dark gray to greenish gray, weathers reddish orange to light yellowish orange, fine- to coarse-grained, quartzose, very micaceous, carbonaceous, locally glauconitic. The Oak Hill is locally predominantly sandy. The thickness is approximately 100 feet; however, only the upper 50 feet or so are exposed in the northeastern portion of the quadrangle.

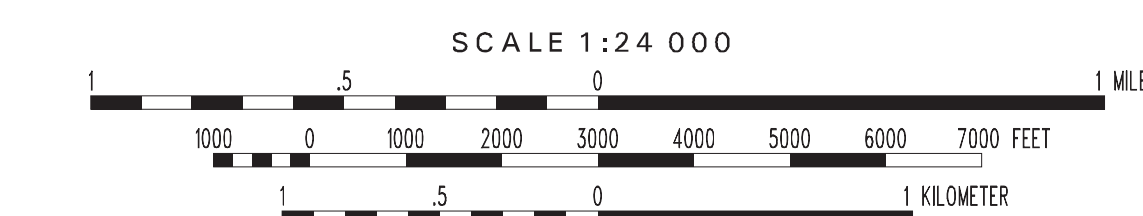
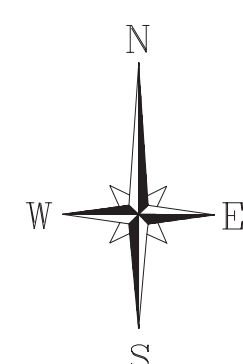
TERTIARY
PALEOCENE

WILCOX GROUP

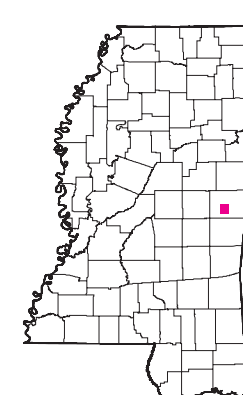
MIDWAY GROUP



GEOLOGIC MAP
LAUDERDALE NW QUADRANGLE
Kemper County, Mississippi



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Geology field checked in 2001 using the 1962 (photorevised 1985) U.S. Geological Survey 7.5-minute topographic quadrangle, 1927 North American datum, contour interval 20 feet.
Mississippi Transverse Mercator projection. 1983 North American datum. GRS80 spheroid.
1000-meter Universal Transverse Mercator grid ticks, zone 16, 1983 datum shown in red, 1927 datum shown in blue.
Sources: Road and water features, USGS Digital Line Graph data, 1:100,000 scale. Public Land Survey System, Mississippi Automated Resource Information System (MARIS), 1:24,000 scale.
Geographic Information System by Daniel W. Morse.
This map was produced by the Mississippi Office of Geology in cooperation with the U.S. Geological Survey, National Geologic Mapping Program, under STATEMAP grant #00FIQAG0053.