MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

OPEN-FILE REPORT 279

GEOLOGIC MAP

of the

CENTER HILL QUADRANGLE

Lauderdale and Kemper Counties, Mississippi

Geology by David E. Thompson, RPG
and R. Tyler Berry, RPG

2016

DESCRIPTION OF MAP UNITS

QUATERNARY HOLOCENE

Qal — ALLUVIUM

Sand, flood plain sands, and silts.

TERTIARY — EOCENE — WILCOX GROUP

Th — HATCHETIGBEE FORMATIONS

Sand, gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to very coarse-grained, quartzose, micaceous, pyritic, clay clast conglomerate; interbedded to interlaminated with clay, gray to brownish gray, weathers very light gray to white, silty, carbonaceous to lignitic, especially argillaceous in the upper beds of the formation; lignite. The basal 150 feet or so are equivalent to the Bashi Formation of east-central Mississippi. The Bashi interval contains at least three distinct greensand marl intervals, with the most notable being the uppermost; a fossiliferous, boulder-bearing horizon at Meridian (designated by a green dashed line on the geologic map). Sand, gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to very coarse grained, quartzose, glauconitic, micaceous, carbonaceous, slightly pyritic, locally exhibits fossil prints and/or calcareous fossil remains, commonly weathers to large, limonitic, concretionary masses. The uppermost, fossiliferous, boulder-bearing interval is thought to mark the Paleocene/Eocene unconformity. The green sand marls are typically bounded by silt, clay, or lignite lithologies.
The upper 100 feet of the formation may be very sandy locally, and constitutes the basal portion of the Meridian/Upper Wilcox Aquifer.

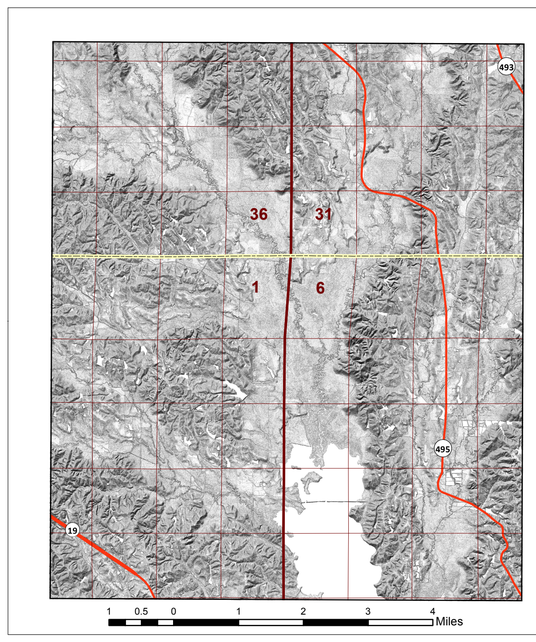
PALEOCENE

Ttu — TUSCAHOMA FORMATION

Sand, dark greenish gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to coarse-grained, quartzose, micaceous, carbonaceous, slightly 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 along with several stratigraphically higher upper Tuscahoma lignite seams.

A-002 — Drill-hole locality and identification number

Meridian Bashi Horizon



GEOLOGIC MAP

CENTER HILL QUADRANGLE

Lauderdale and Kemper Counties, Mississippi

N W E S

1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

Geology field checked in 2016 using the 1962, PHOTOREVISED 1985, U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, Contour Interval 20 feet and supplemental contour interval 10 feet. Universal Transverse Mercator projection, 1983 North American datum. GRS80 spheroid. 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 16, shown in red. January 2016, magnetic north declination in quadrangle center is 1°44' west of true north, 0°20' uncertainty, changing by 0°6' west per year.

Sources: Contours derived from USGS 7.5-minute brown plate to mylar separate vectorized by Mississippi Automated Resource Information System (MARIS), 1:24,000 scale. Public Land Survey System from (MARIS), 1:24,000 scale. Water features derived from USGS USTOPO 2015. Road features derived from Mississippi Department of Transportation (MDOT) Road Centerline 2015. Declination, National Oceanic and Atmospheric Administration (NOAA).

Geographic Information System by Daniel W. Morse. MDEQ does not warrant the accuracy or completeness of the source data. Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes.

This map was produced by the Mississippi Office of Geology in cooperation with the United States Geological Survey, National Coal Resources Data System (NCRDS) Program, under grant #G10AC00467.

Structural Cross-Section of the Center Hill 7.5-Minute Geologic Quadrangle