

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
 OFFICE OF GEOLOGY  
 OPEN-FILE REPORT 265  
**GEOLOGIC MAP**  
 of the  
**VIMVILLE QUADRANGLE**

Lauderdale County,  
 Mississippi



Geology by David E. Thompson, RPG

2014

**DESCRIPTION OF MAP UNITS**

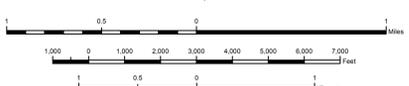
- QUATERNARY HOLOCENE**
- Qal** ALLUVIUM  
Sand, flood plain sands, and silts.
- CLAIRBORNE GROUP**
- Tt** TALLAHATTA FORMATION  
Basic City Member  
Clay, silt, claystone, and quartzitic siltstone and sandstone, olive gray to brownish gray, weathers yellowish gray to very light gray or white, carbonaceous with leaf and plant impressions, faunal structures are common, locally exhibits marine fossil prints, near surface exposures may exhibit jointing with limonite infilling; claystones typically weather to lightweight and brittle rock with a subconchoidal fracture; interbedded to interlamated with sand, gray to very light gray, weathers pale yellowish orange to reddish orange, very fine- to medium-grained, unconsolidated, massive to cross-bedded, quartzose, micaceous, carbonaceous, pyritic; also greenish yellow to buff, fine-grained, semi-consolidated, siliceous, glauconitic, and silty. The base is marked by a sandy interval, approximately 20 feet thick, which in outcrop exposures may exhibit quartzitic sandstone characteristics. The total thickness is approximately 120 to 400 feet; however, only the lower 160 feet or so are exposed in the southwestern portion of the quadrangle.
  - MS** MERIDIAN SAND  
Basal portion of the Tallahatta Formation, not differentiated. Sand, gray to very light gray, weathers yellowish gray to reddish orange, very fine- to very coarse-grained, quartzose, micaceous, locally carbonaceous and/or glauconitic, pyritic. The thickness of the Meridian Sand is variable, from 20 to 100 feet. The Meridian Sand constitutes the upper portion of the Meridian/Upper Wilcox Aquifer.
- TERTIARY EOCENE**
- Th** HATCHETIGBEE FORMATION  
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 interlamated 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 Meridan (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 total thickness of the Hatchetigbee interval is approximately 320 feet. The upper 100 feet of the formation may be very sandy locally, and constitutes the basal portion of the Meridian/Upper Wilcox Aquifer.
  - 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 interlamated 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 I through I, along with several stratigraphically higher upper Tusahoma lignite seams. Total thickness is approximately 430 feet; however, only the upper 40 or 50 feet are exposed northeastern region of the quadrangle.

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 An informal boundary which divides the clays and silts at the top of the middle Tusahoma beds from the overlying basal sands of the upper Tusahoma Formation. The upper Tusahoma, which may be predominantly sandy locally, is approximately 140 feet thick. Argillaceous beds generally persist at the top.

**N5** Drill-hole locality and identification number



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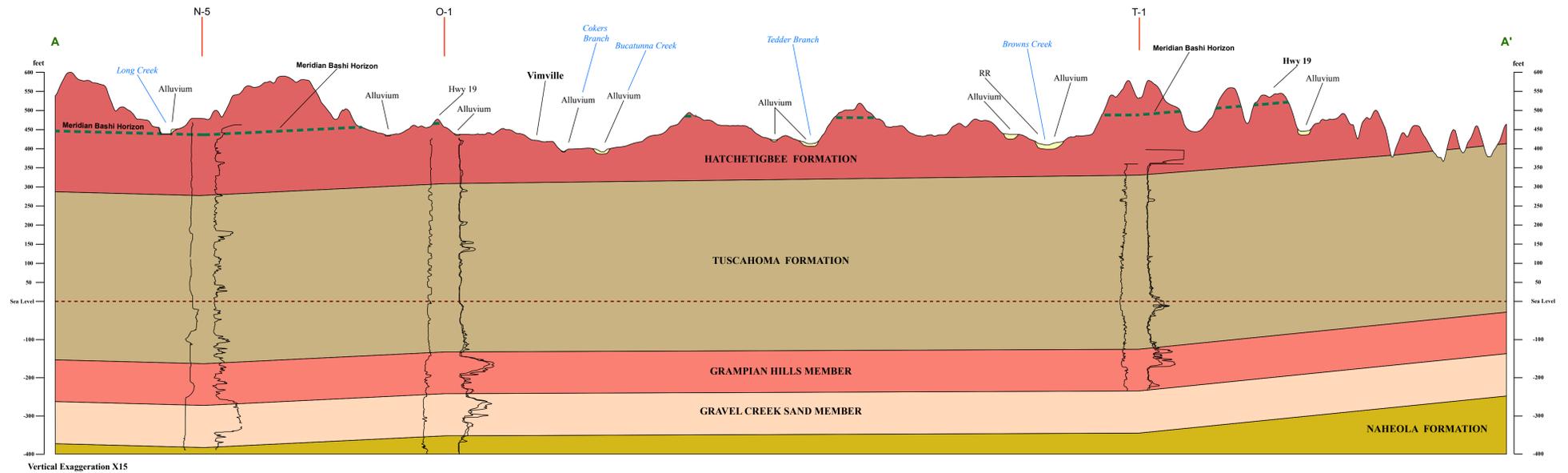
Geology field checked in 2014 using the 1971, U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, Contour Interval 20 feet and supplemental contour interval 10 feet. Universal Transverse Mercator projection, 1983 North American datum. GRS80 spheroid, 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 18, shown in red. January 2014, magnetic north declination in quadrangle center is 1°43'52" west of true north, changing by 0'6.9" west per year.

Sources: The base map is derived from the Digital 2012 USPTOPO, USGS 1982 contour, mylar separate of the USGS topographic quadrangle map, railroad feature, Federal Railroad Administration (FRA), edition 2002, 1:100,000 scale, Public Land Survey System, Mississippi Automated Resource Information System (MARIS), 1:24,000 scale, Destination, 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 Geologic Mapping Program, under STATEMAP grant #G13AC03234.

**Structural Cross-Section of the Vimville 7.5-Minute Geologic Quadrangle**



Vertical Exaggeration X15

