



MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY
OPEN-FILE REPORT 102

GEOLOGIC MAP of the MT. PLEASANT QUADRANGLE Marshall County, Mississippi, and Fayette County, Tennessee

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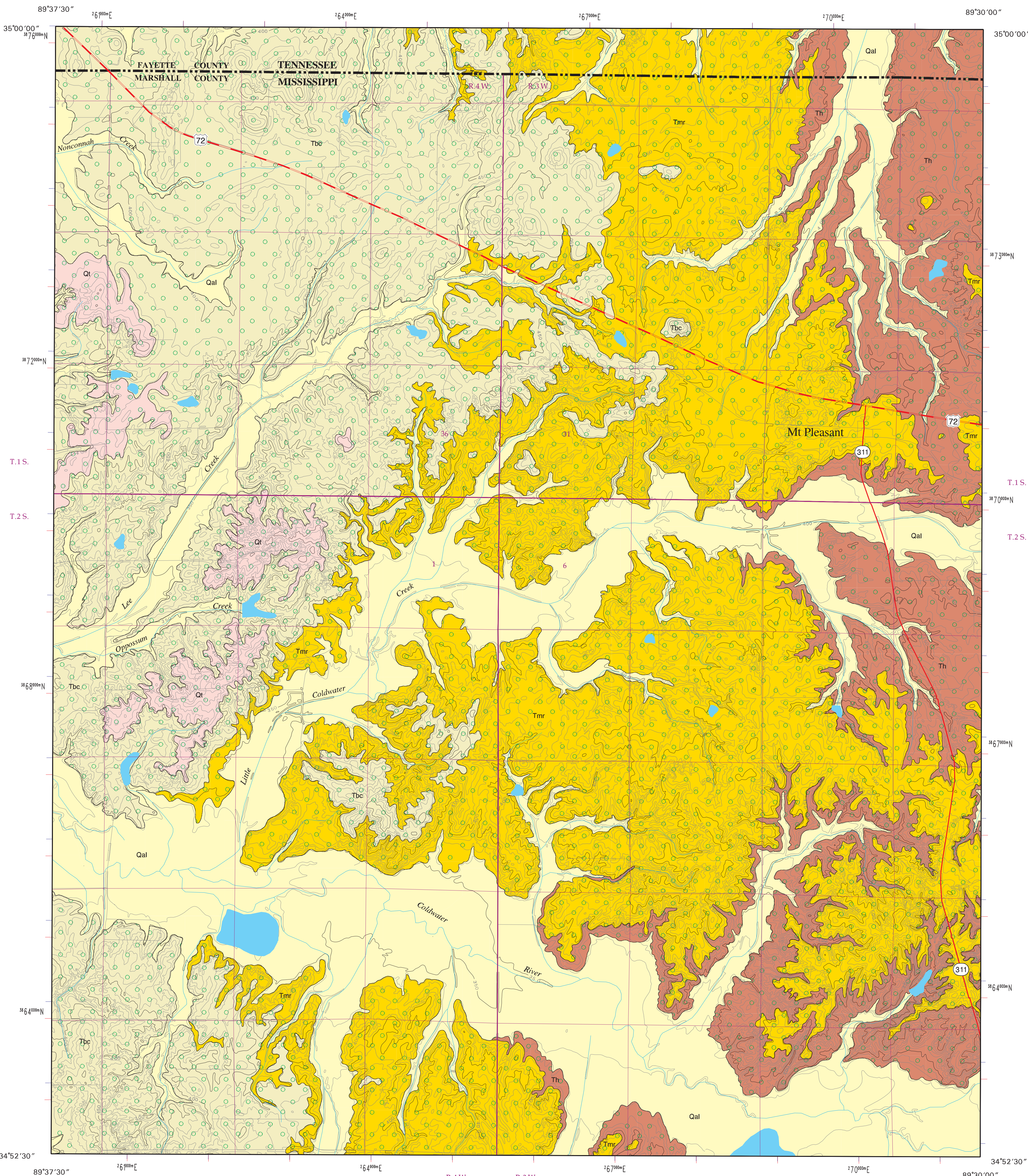
2003

DESCRIPTION OF MAP UNITS

HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	ALLUVIUM
							Qal
							Sand, flood plain sands, silts, and minor gravels.
HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	LOESS
							Qt
							Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose, feldspathic. Unweathered loess is typically calcareous with dolomite and calcite; however, loess in this quadrangle is highly weathered, leached/noncalcareous, very clayey, and has been referred to as a brown or yellow loam. Loess is an eolian deposit derived from glacial outwash. Loess deposits blanket the pre-loess topography of the quadrangle area, with greater quantities developed along ridge crests than in valleys, creating substantial local variation in thickness. The thickness in the quadrangle is estimated at 2 to 7 feet. In places, weathered loess contains secondary deposits of small calcareous concretions (caliche, loess dolls). The basal few feet of loess grade into the sands and gravels of the underlying Pre-Loess Terrace Deposits.
HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	PRE-LOESS TERRACE DEPOSITS
							Tbc
							Sand, dark red, reddish orange, pink, bright yellowish brown, brown, and occasionally white, fine- to very coarse-grained, predominantly quartzose, locally micaceous, poorly sorted and massive to well sorted and cross-bedded; typically graveliferous with quartz and chert pebbles, especially at base. Commonly exhibits clay clast conglomerate with purplish red to white, kaolinitic, rip-up clasts. Locally interbedded with clay, light gray to purplish red to white, kaolinitic, plastic. Locally contains irregular layers of hematitic to limonitic sandstone. Unconformity at base, with an irregular, undulating surface. Roughly corresponds to the Lafayette Formation, Brown (1907), the Citronelle Formation, Priddy (1942), the Bentley Terrace, Fisk et al. (1949), and the Upland Complex, Saucier (1994). Pre-Loess Terrace Deposits were found to occur only in the western portion of the quadrangle with a thickness estimated from a few feet up to 40 feet. May be considered a recharge area for the Memphis Sand Aquifer where Pre-Loess Terrace sands and gravels overlie Tertiary aquifer sands.
HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	TALLAHATTA FORMATION Basic City Shale Member
							Tbc
							Clay and silt, olive gray to brownish gray, weathers yellowish gray to very light gray or white, carbonaceous to lignitic, locally indurated, near surface exposures may exhibit siderite nodules and jointing with limonite infilling; interbedded to interlaminated with sand, gray to very light gray, weathers pale yellowish orange to reddish orange, very fine- to medium-grained, quartzose, micaceous, carbonaceous, pyritic, locally slightly glauconitic. The lower approximate half of the member is predominantly quartzose sand with a very coarse-grained texture. The total thickness is approximately 220 feet; however, only the lower 120 feet or so are exposed along the western portion of the quadrangle. Sandy horizons of the member constitute a portion of the Memphis Sand Aquifer.
HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	MERIDIAN SAND
							Tmr
							Sand, gray to very light gray, weathers yellowish gray to reddish orange, very fine- to very coarse-grained, typically fining upward, quartzose, micaceous, locally carbonaceous or slightly glauconitic, pyritic, interbedded to interlaminated with silt, siltstone, and clay, dark gray to white, carbonaceous, upper beds are typically silty or argillaceous. The thickness is approximately 100 feet. Unconformity at base. The Meridian Sand constitutes a portion of the Memphis Sand Aquifer.
HOLOCENE	QUATERNARY	PLEISTOCENE	CLAIBORNE GROUP	TERTIARY	Eocene	WILCOX GROUP	HATCHETIGBEE FORMATION
							Th
							Sand, gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to very coarse-grained, quartzose, micaceous, pyritic, clay clast conglomerate, especially sandy and coarse-grained at base; interbedded to interlaminated with clay, gray to brownish gray, weathers very light gray to white, silty, carbonaceous, especially argillaceous in the upper beds of the formation. The basal 50 feet or so represent a non-marine equivalent to the fossiliferous, marine Bashi Formation of east-central Mississippi, mark the Paleocene/Eocene unconformity, and consist of sand, gray to light gray, weathers reddish orange to pale yellowish orange, very fine- to very coarse-grained, quartzose, micaceous, carbonaceous, slightly pyritic, clay clast conglomerate. The thickness is approximately 220 feet; however, only the upper 120 feet or so are exposed in the southeastern portion of the quadrangle. The Hatchetigbee Formation constitutes the basal portion of the Memphis Sand Aquifer.

References Cited

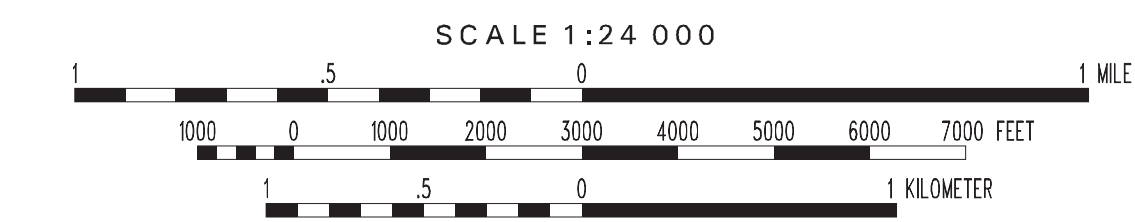
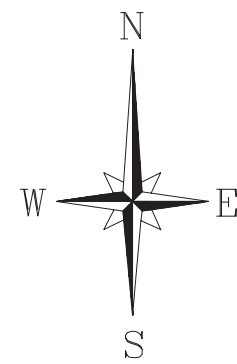
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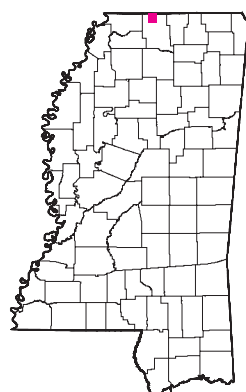
GEOLOGIC MAP

MT. PLEASANT QUADRANGLE

Marshall County, Mississippi,
and Fayette County, Tennessee



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Geology field checked in 2001 using the 1971 U.S. Geological Survey 7.5-minute topographic quadrangle, 1927 North American datum, contour interval 10 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 and contours, Mississippi Automated Resource Information System (MARIS), 1:24,000 scale.
Geographic Information System by Daniel W. Morse.
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