

GEOLOGIC MAP  
of the  
**WHITTEN TOWN QUADRANGLE**  
Tippah and Benton Counties,  
Mississippi

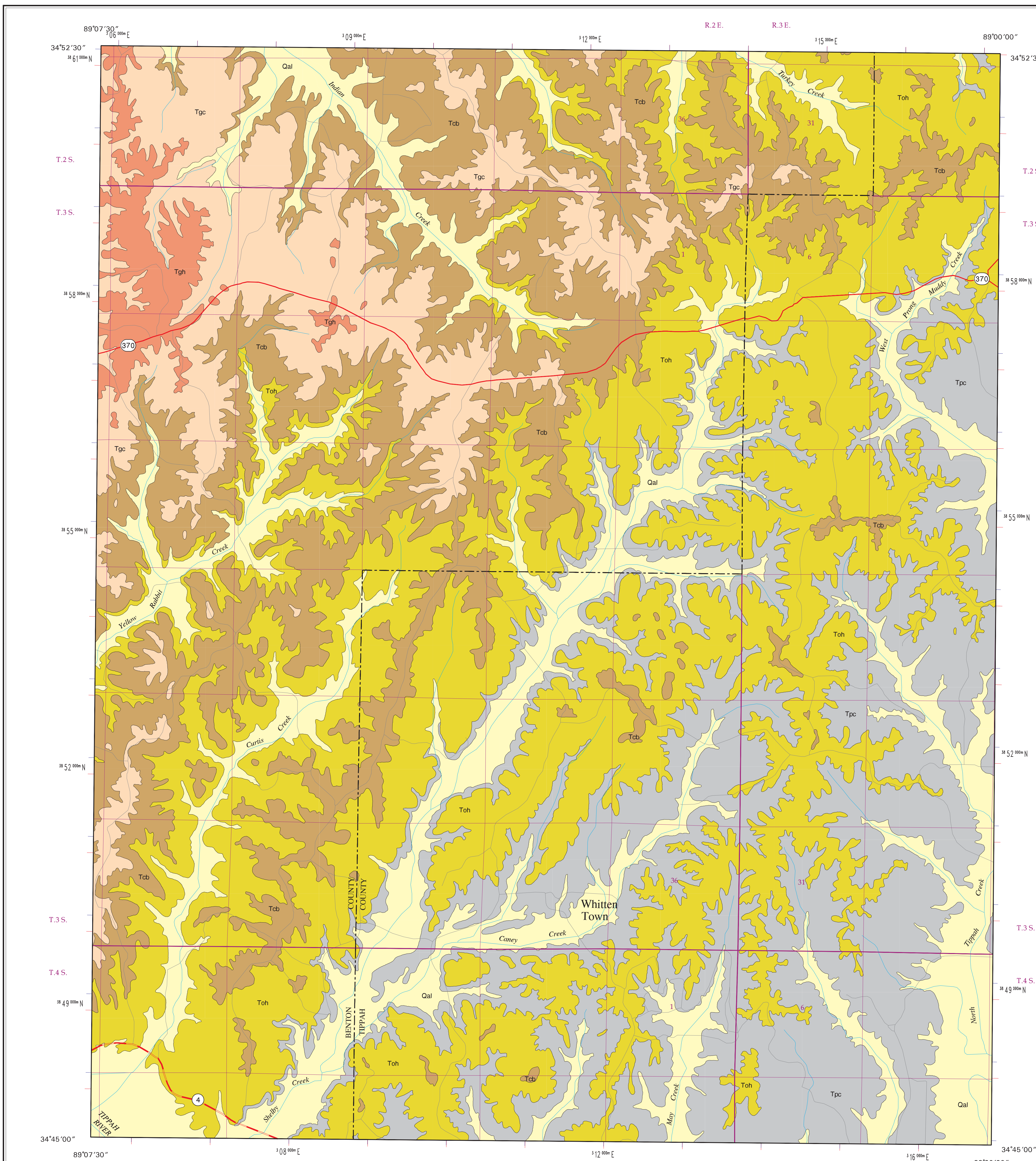


Geology by David E. Thompson

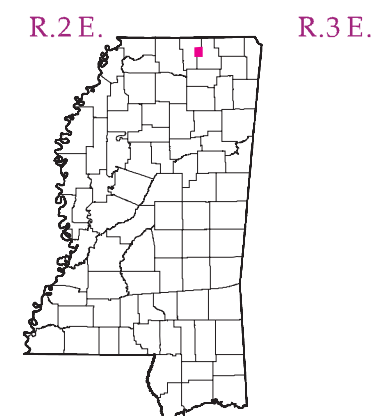
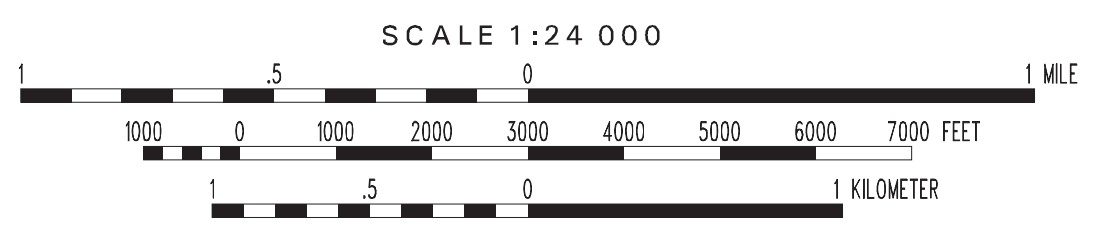
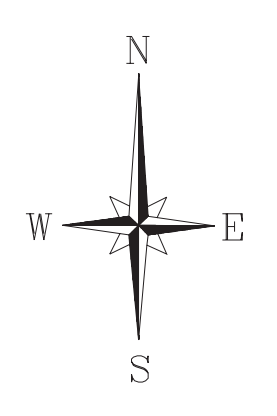
2000

**DESCRIPTION OF MAP UNITS**

QUATERNARY HOLOCENE	Oal	<b>ALLUVIUM</b> Sand, flood plain sands and silts.
	<b>NANAFALIA FORMATION</b>	
WILCOX GROUP	Tgh	<b>Grampian Hills Member</b> Clay and silt, medium gray to pale green, weathers to various shades of red, brown, and gray, carbonaceous; lignitic, contains correlative Red Hills Mine lignite seams C through C <sub>7</sub> ; interbedded to interlaminate with sand, dark greenish gray to medium gray, weathers reddish orange to pale yellowish orange, very fine- to medium-grained, quartzose, micaceous, carbonaceous, and slightly glauconitic. Basal portion is typically sandy. Total thickness is 130 feet; however, only the lower 90 feet of the member is exposed along the western portion of the quadrangle.
	Tgc	<b>Gravel Creek Sand Member</b> Sand, medium gray to very light gray, weathers reddish orange to pale yellowish orange, very coarse- to fine-grained, typically fining upward, quartzose, micaceous, with clay clast conglomerate; upper portion consists of clay, dark gray to light gray, typically dense, occasionally silty, carbonaceous to lignitic. Contains correlative Red Hills Mine lignite seams A and B. Thickness is 80 to 110 feet. Unconformity at base. Basal sandy interval (along with the underlying Coal Bluff sand) constitutes the Lower Wilcox Aquifer.
TERTIARY PALEOCENE	Tcb	<b>NAHEOLA FORMATION</b> <b>Coal Bluff Member</b> 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, with clay clast conglomerate; interbedded to interlaminate with clay and silt, dark gray to light gray, carbonaceous, lignitic, especially argillaceous near top. Contains characteristic kaolinitic to bauxitic clay clasts and beds. The thickness is 70 to 80 feet. Unconformity at base. Along with the overlying Gravel Creek sand, constitutes the Lower Wilcox Aquifer.
	Toh	<b>Oak Hill Member</b> Clay, brownish black to medium gray, weathers grayish brown to white, silty, carbonaceous, lignitic, kaolinitic to bauxitic; interbedded to interlaminate with sand, dark gray to greenish gray, weathers reddish orange to light yellowish orange, fine- to coarse-grained, quartzose, very micaceous, occasionally glauconitic. Locally, may be predominantly sandy where the typical clay facies changes laterally and abruptly into apparent fluvial channels. The thickness is approximately 100 feet.
MIDWAY GROUP	Tpc	<b>PORTERS CREEK FORMATION</b> Clay, grayish black, weathers dusky yellow brown to brownish gray, blocky, typically exhibits conchoidal fracture; upper beds, correlative with the Matthews Landing Member, are interlaminate to thinly interbedded with sand, pale yellow to greenish gray, fine- to very fine-grained, highly micaceous, glauconitic, and often containing sideritic concretions and nodules. The total thickness is approximately 220 feet; however, only the upper 140 feet or so are exposed along the eastern portion of the quadrangle.



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Geology field checked in 2000 using the 1982 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.