MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

OPEN-FILE REPORT 325

GEOLOGIC MAP

of the

FULTON NORTHEAST QUADRANGLE

Itawamba, Tishomingo, and Prentiss Counties, Mississippi

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2021

DESCRIPTION OF MAP UNITS

QUATERNARY

HOLOCENE

Fill — ARTIFICIAL FILL
Anthropogenic fill including earthen, stone, and manufactured materials such as concrete and steel.

Qal — ALLUVIUM
Sand, medium- to brownish-gray, very fine- to very course-grained, subangular to subrounded quartz, silty, clayey; commonly contains organic matter; chert and quartzite pebbles common at base.

PLEISTOCENE

Qt1 / Qt2 / Qt3 / Qt4 — TERRACE ALLUVIUM
Sand, light-gray to dark reddish-brown, very fine- to very course-grained, subangular to subrounded quartz, silty, clayey; lower portions contain layers and lenses of flattened quartzite and quartz pebbles interspersed with rounded chert pebbles; iron staining common on pebbles. Qt1 - youngest and lowest in elevation of Terrace alluvium deposits. Qt2 - second youngest in age and elevation of Terrace alluvium deposits. Qt3 - third youngest in age and elevation of Terrace alluvium deposits. Qt4 -fourth youngest in age and elevation of Terrace alluvium deposits. The older in age and higher in elevation Terrace alluvium deposits become increasingly eroded and discontinuous.

CRETACEOUS

UPPER CRETACEOUS

EUTAW GROUP

Ke — EUTAW FORMATION
Sand, medium-to olive-gray, fine- to medium-grained, subangular to subrounded quartz, glauconitic, micaceous, horizontal- and cross-bedded; commonly thinly interbedded and interlaminated with clay, medium-gray, locally carbonaceous; isolated occurrences of petrified wood in lower portions. Weathers to various shades of reddish-brown. Frequent occurrence of ferruginous cemented sand molds of Callianassa sp. burrows. The Eutaw Formation disconformably ovelays the McShan Formation. Thickness ranges up to about 140 feet.

Kmc — MCSHAN FORMATION
Sand, pale yellowish-brown to very light-gray, very fine- to fine-grained, well sorted, subangular quartz, glauconitic, micaceous, silty; thinly interbedded and interlaminated with silt, light-gray to grayish orange- pink, micaceous, clayey. Horizontal- and ripple-laminated; frequent zones of massive- to cross-bedded, fine-to course-grained sand; frequent chert pebble lenses and stringers. Weathers to various shades of reddish- brown to yellowish-gray; local occurrences of ferruginous cemented sand molds of Callianassa sp. burrows; common occurrence of petrified wood; occasional occurrence of carbonaceous clays, dark-gray, micaceous, containing carbonized wood fragments. The McShan Formation disconformably ovelays the Tuscaloosa Group. Thickness ranges up to about 60 feet.

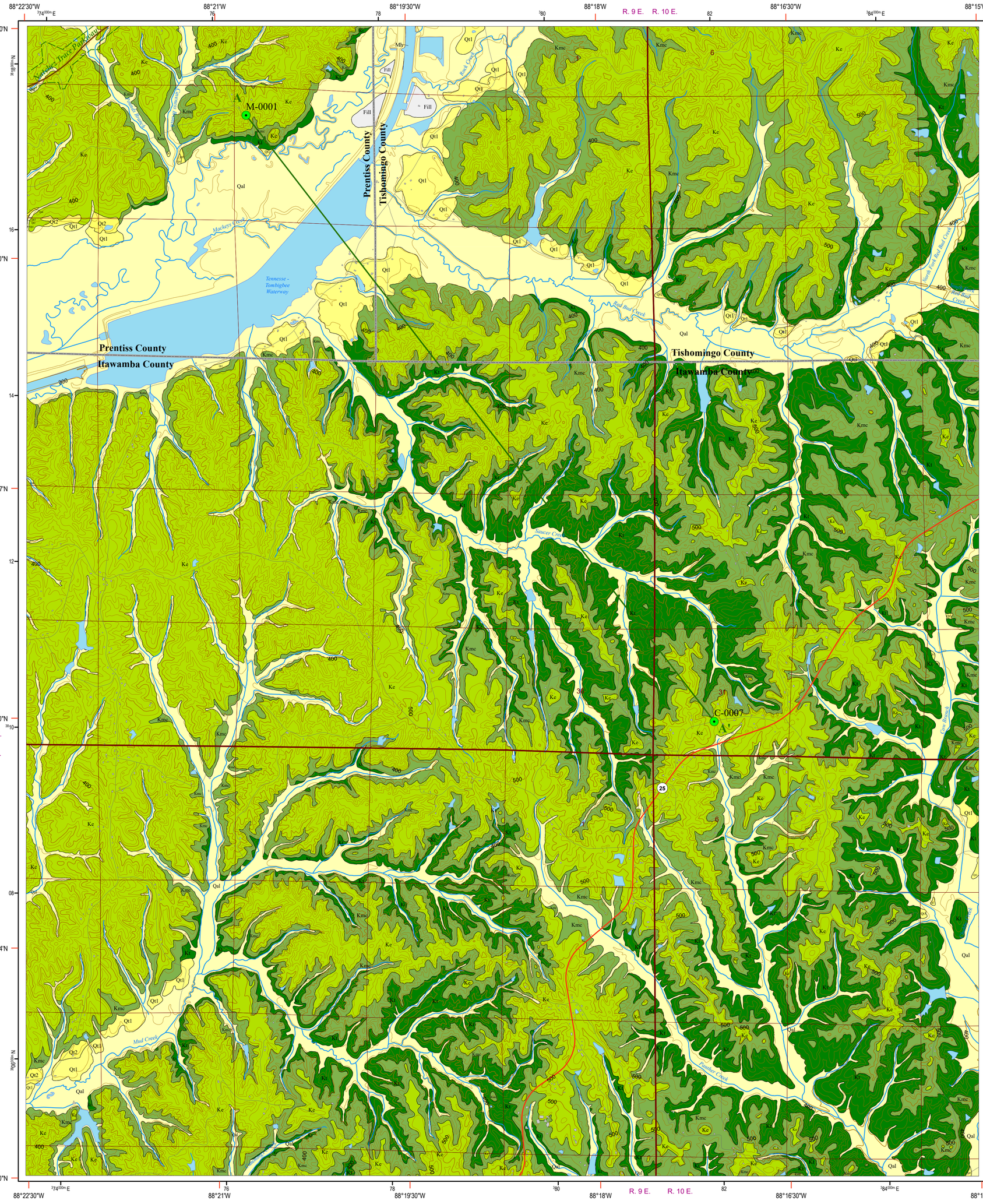
Kt — TUSCALOOSA GROUP (UNDIFFERENTIATED)
Gravel, chert, white to dark-gray, very well rounded; frequent silt and clay matrix; sand, light- to moderate reddish-brown, very fine- to very course- grained, subrounded to angular quartz and chert grains, poorly sorted, with frequent gravel lenses and stringers; clay, white- to medium-gray with occasional occurrences of carbonaceous dark-gray clays; zones of multi-colored chert gravel; frequent well-cemented chert pebble conglomeratic zones. Laterally traceable silt and clay intervals occur most frequently in uppermost and lowermost intervals. The Tuscaloosa Group disconformably overlays the Hartselle Formation. Thickness ranges up to about 95 feet.

MISSISSIPPIAN

Mh — HARTSELLE FORMATION
Sandstone, light-gray to light brownish-gray, fine- to medium-grained well cemented quartz arenite, thin- to massive- bedded; contains thin intervals of thinly bedded and laminated siltstone and shale, medium- to dark-gray; local ferruginous staining. Basal contact and total thickness not determined.

M-0001 — Drill Hole Locality and Identifier

Surface Mine



GEOLOGIC MAP
FULTON NORTHEAST QUADRANGLE
Itawamba, Tishomingo, and Prentiss Counties, Mississippi

N W E S

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

Scale 1:24,000
Contour Interval 20 Feet

Geology field checked in 1986, 1987, 1992, 2020, and 2021 using the 1965, U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, contour interval 20 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. December 2021 magnetic declination 2.75° W ± 0.36' changing by 0.08° W per year.

Sources: Contours obtained from Mississippi Automated Resource Information System (MARIS). Public Land Survey System, 1:24,000 scale, railroad features, highway features, and hydrologic information from MARIS. We thank the National Park Service and Mississippi State University for their cooperation and for facilitating the data collection and fieldwork necessary for this mapping project. Lidar from Brad Segrest & Barbara Yassin of The Mississippi Department of Environmental Quality (MDEQ), Natural Resources Conservation Service, National Oceanic and Atmospheric Administration, United States Army Corps of Engineers, and MARIS. Building Footprint data is licensed by Microsoft under the Open Data Commons Open Database License (ODbL).

Geographic Information System by Darrel W. Schmitz RPG, Mississippi State University, and Jonathan R. Leard, GIT, MDEQ Office of Geology-Surface Mapping Division. 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.

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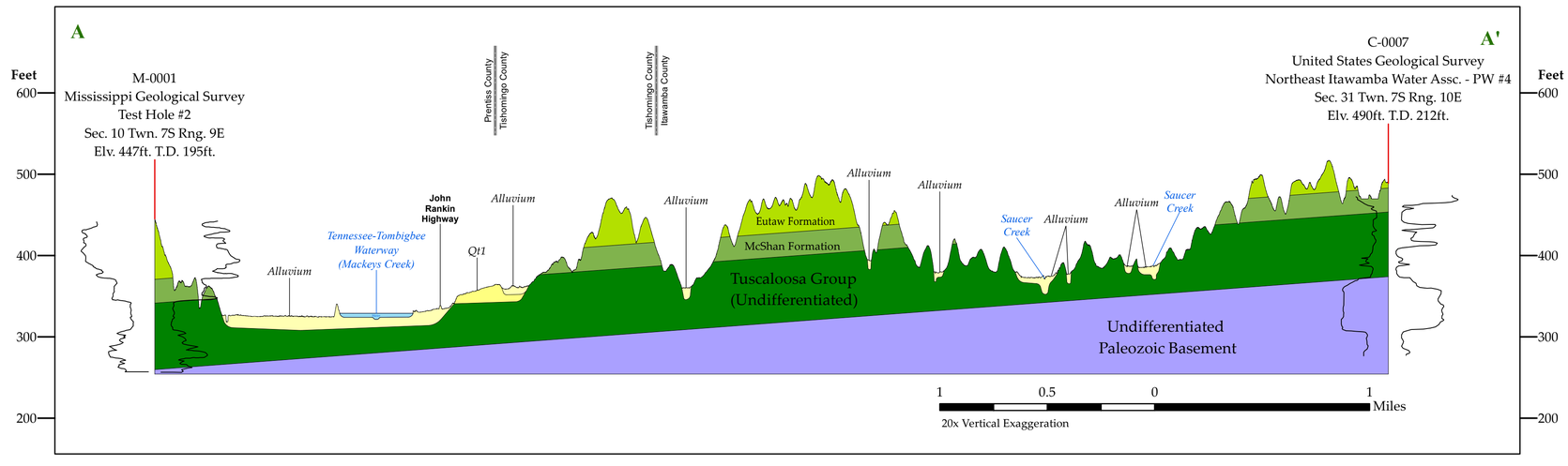
Structural Cross-Section of the Fulton Northeast 7.5-Minute Geologic Quadrangle



2009-2018 Mississippi Statewide LIDAR-Generated DEM and Hill Shade

1 0.5 0 1 Miles