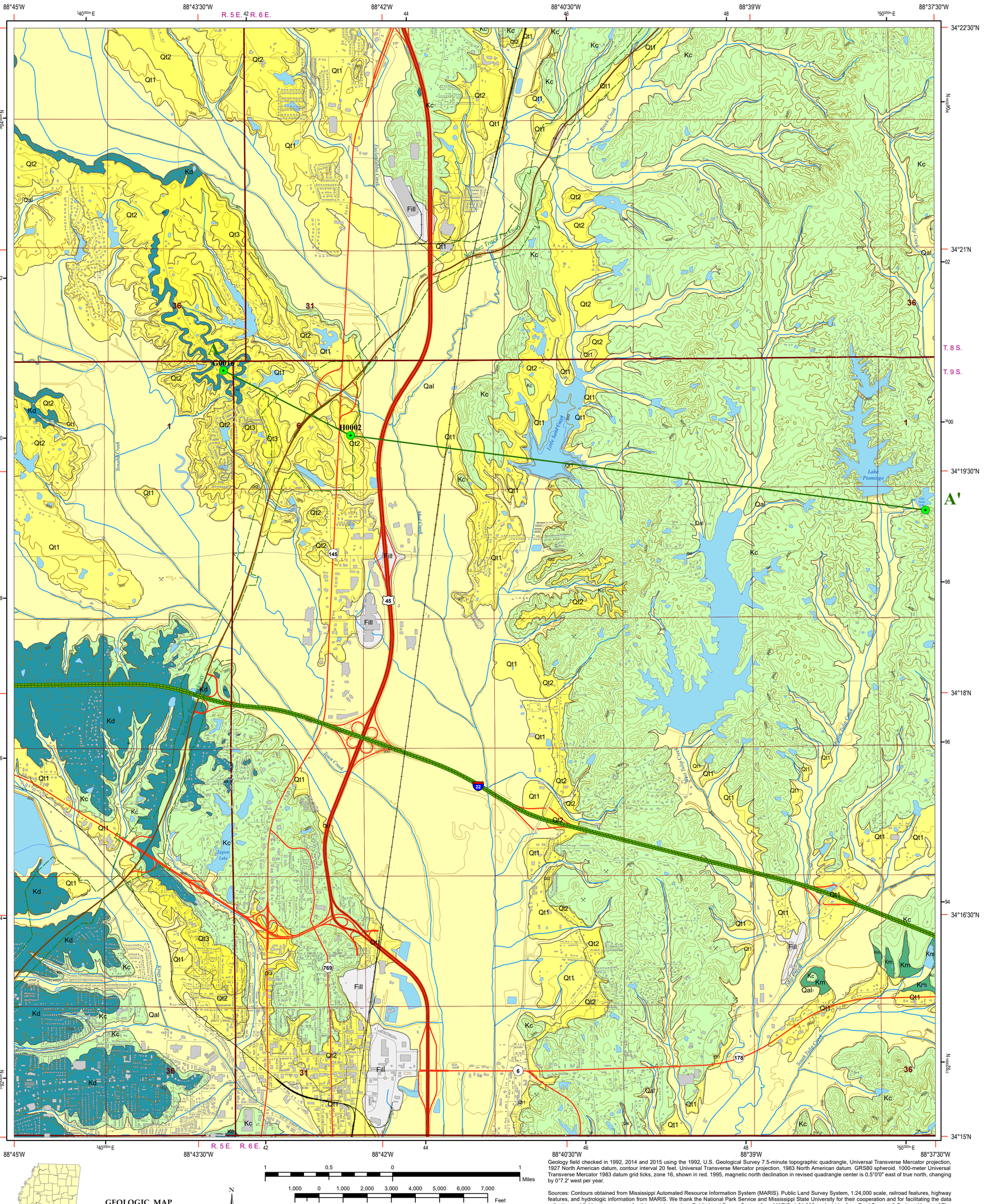


MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

OPEN-FILE REPORT 307

GEOLOGIC MAP
of the
TUPELO QUADRANGLE

Lee County, Mississippi

Geology by Darrel Schmitz, RPG
and Ernest E. Russell

Cross-Section by Darrel Schmitz, RPG
and Jonathan R. Leard, GIT

2019

DESCRIPTION OF MAP UNITS

QUATERNARY — HOLOCENE

Fill — ARTIFICIAL FILL

Mainly silt and sand over original geologic unit.Generally red-brown and yellowish-orange.

Qal — ALLUVIUM

Floodplain deposits of clay, silt, and sand. Generally gray, yellowish-orange, orange, and tan. Approximately 25 feet thick along larger streams, thinning up tributaries.

QUATERNARY — PLEISTOCENE

Qt1, Qt2, Qt3 — TERRACE ALLUVIUM

Abandoned floodplain deposits of clay, silt, and sand generally yellowish-orange, orange, and tan. Approximately 25 feet thick adjacent to larger stream Alluvium or younger terrace deposits, thinning or non-existent up tributaries. 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 that is more eroded and discontinuous.

CRETACEOUS — SELMA GROUP

Kd — DEMOPOLIS CHALK

Massive-bedded chalk and marly chalk. Medium to light gray and bluish-gray, weathers to tan. Contains subordinate amounts of pyrite, glauconite, and mica. Fossiliferous in many locations. Thickness ranges up to approximately 50 to 60 feet.

Kc — COFFEE SAND

Predominately massive sand that is locally cross-bedded, glauconitic, lignitic, and fossiliferous with various amounts of clay. Contains calcareous sandstone intervals. Light gray to gray, tan, yellow to yellow-green, olive-drab and red-brown. Includes the Tupelo Tongue, which is massive-bedded calcareous, silty sand. Conformable, transitional contact with overlying Demopolis Formation marked by a ledge forming fossiliferous sandstone approximately one foot thick. Thickness ranges up to approximately 180 to 200 feet.

Km — MOOREVILLE CHALK

Massive-bedded marly chalk and calcareous clay. Medium to light gray, and blueish-gray, weathers to tan. Locally sandy and contains subordinate amounts of glauconite. Fossiliferous in many locations. Conformable contact with overlying Coffee Sand. Thickness ranges from approximately 115 to 160 feet.

H0002 — Drill Hole Locality and Identifier

Surface Mine

GEOLOGIC MAP
TUPELO QUADRANGLE
Lee County, Mississippi

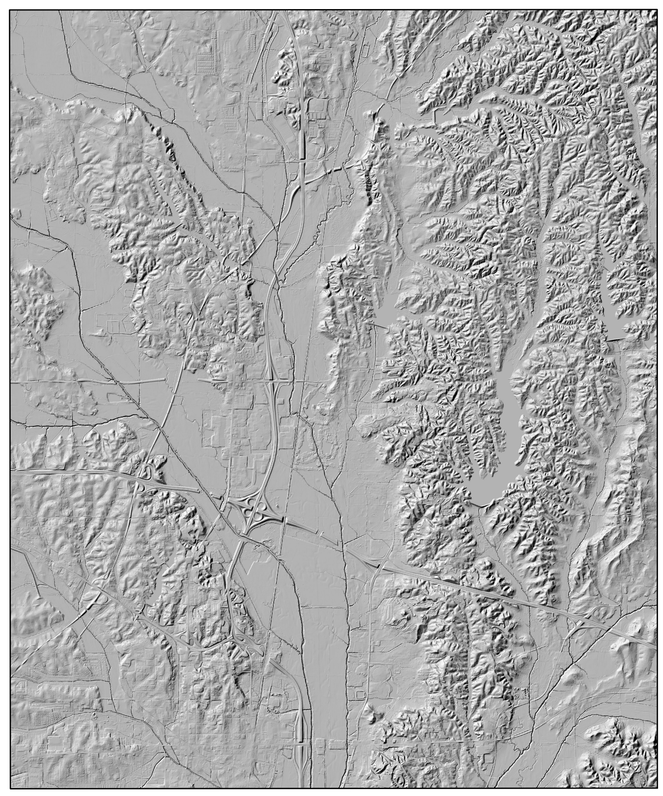
SCALE 1:24,000
Contour Interval 20 Feet

Geology field checked in 1992, 2014 and 2015 using the 1992, 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. 1995, magnetic north declination in revised quadrangle center is 0.5°0'0" east of true north, changing by 0°7.2' west 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. Public Land Survey System from MARIS, 1:24,000 scale. 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). Surface mine locations from MDEQ Office of Geology - Mining and Reclamation Division and USGS.

Geographic Information System by Courtney D. Killian, Darrel Schmitz, Kate Grala, 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.

Publishing Organization: This map was produced by the Mississippi Office of Geology in cooperation with Mississippi State University. This map was funded through a grant from the National Park Service.



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

Structural Cross-Section of the Tupelo 7.5-Minute Geologic Quadrangle