MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

OPEN-FILE REPORT 316

GEOLOGIC MAP

of the

GUNTOWN QUADRANGLE

Lee and Union Counties, Mississippi

Geology by Darrel Schmitz, RPG
and Ernest E. Russell, PhD

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

2019

DESCRIPTION OF MAP UNITS

QUATERNARY — HOLOCENE

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, Qt4, Qt5 — 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. Qt4 -fourth youngest in age and elevation of Terrace alluvium deposits that is more eroded and discontinuous. Qt5 -fifth 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 — SELMA GROUP

Kd — DEMOPOLIS CHALK

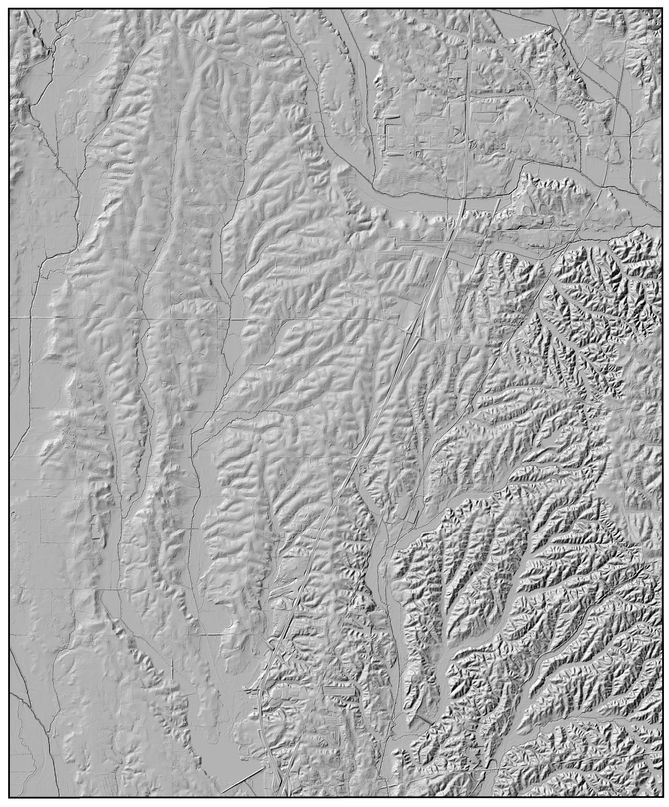
Massive-bedded chalk and marly chalk. Medium to light gray and bluish-gray, weathers to tan. Contains subordinate amounts of pyrite, glauconite, and mica. Fossiliferous in many locations. Thickness ranges up to 125 feet.

Kc — COFFEE SAND

Sand, buff, yellow, red-brown, light to dark gray, fine to medium-grained, glauconitic, with zones of silty sand and clay and occasional thin beds of concretionary sandstone layers. Fossiliferous in certain parts. The base of the Coffee Formation is questionably disconformable, almost impossible to differentiate on the basis of lithology from the underlying Tombigbee Member sands. The only evidence are phosphatic molds and general fossils in the basal Coffee not common to the Tombigbee. Thickness ranges up to 240 feet.

A0002 — Drill Hole Locality and Identifier

Surface Mine



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

GEOLOGIC MAP
GUNTOWN QUADRANGLE
Lee and Union Counties, Mississippi

Scale 1:24,000

Contour Interval 20 Feet

Geology field checked in 1992, 2001, 2016, and 2017 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. 2019, magnetic north declination in revised quadrangle center is 2.30° W ± 0.34° changing by 0.07° 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. 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 Kate Grala, Darrel 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.

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.

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