MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY
OPEN–FILE REPORT 190

GEOLOGIC MAP
of the
CARLISLE QUADRANGLE
Claiborne and Warren Counties,
Mississippi

Geology by James E. Starnes and D. Kenneth Davis

2004

DESCRIPTION OF MAP UNITS

QUATERNARY — HOLOCENE

ALLUVIUM

Qal

Flood plain sands, silts, gravels, and clays.

QUATERNARY — PLEISTOCENE

LOESS

Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose to feldspathic. Loess is typically calcareous with dolomite and calcite; however, the upper portion of the loess is highly weathered, leached/noncalcareous, very clayey, and has been referred to as "brown loam." Loess is an eolian deposit derived from glacial outwash. Loess deposits unconformably blanket the pre-loess topography with substantial local variations in thickness. 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 Pre-loess terrace-derived valley fill deposits.

PRE-LOESS TERRACE DEPOSITS

Qt

Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to large cobble size clasts, clasts of sandstone up to boulder size not uncommon. Gravels are predominantly chert with lesser amounts of vein quartz, metaquartzite, agate, sandstone, and rare rhyolite clasts; clay, pink to white, generally occurring as discontinuous lenses and as rip-up clasts, clasts may be boulder size. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the deposits, which overlies the Catahoula and Hattiesburg formations unconformably. "Head-of-hollow," terrace-derived valley fill deposits are common at lower elevations and are isolated to valley walls. These small deposits are of such limited extent as not to warrant representation on this map.

TERTIARY — MIOCENE

HATTIESBURG FORMATION

Tha

Clay, green, gray, brown, weathers white to brown, silty to sandy, locally lignitic; sand, gray, pale yellow to white, fine- to coarse-grained, cross-bedded to massive with rare thinly-bedded pea gravels (gravels consist of black chert and milky quartz, are highly polished, subangular to well rounded), often indurated to sandstones and orthoquartzites at surface, predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places, silicified wood and fossil palm common. The base of the Hattiesburg Formation is designated at the base of a sand unit of regional extent that occurs at the approximate horizon of the base of the Fleming Formation in Louisiana and the middle-Miocene Amos Sand in Alabama.

CATAHOULA FORMATION

Tca

Sand, gray, pale yellow to white, fine- to coarse-grained, cross-bedded to massive with rare thinly-bedded pea gravels (gravels consist of black chert and milky quartz, are highly polished, subangular to well rounded), often indurated to sandstones and opaline-cemented orthoquartzites at surface, sands are predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places, silicified wood and fossil palm common; clay, green, gray, brown, weathers white to brown exhibiting a "popcorn" appearance, silty to sandy, lignite common in basal clays.

GEOLOGIC MAP

CARLISLE QUADRANGLE

Claiborne and Warren Counties,
Mississippi

N W E S

SCALE 1:24 000

1 .5 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

Geology field checked in 2004 using the 1963 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 and contours, Mississippi Automated Resource Information System (MARIS), 1:24,000 scale.

Geographic Information System by Daniel W. Morse. Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes.

This map was produced by the Mississippi Office of Geology in cooperation with the U.S. Geological Survey, National Geologic Mapping Program, under STATEMAP grant #03HQAG0073.