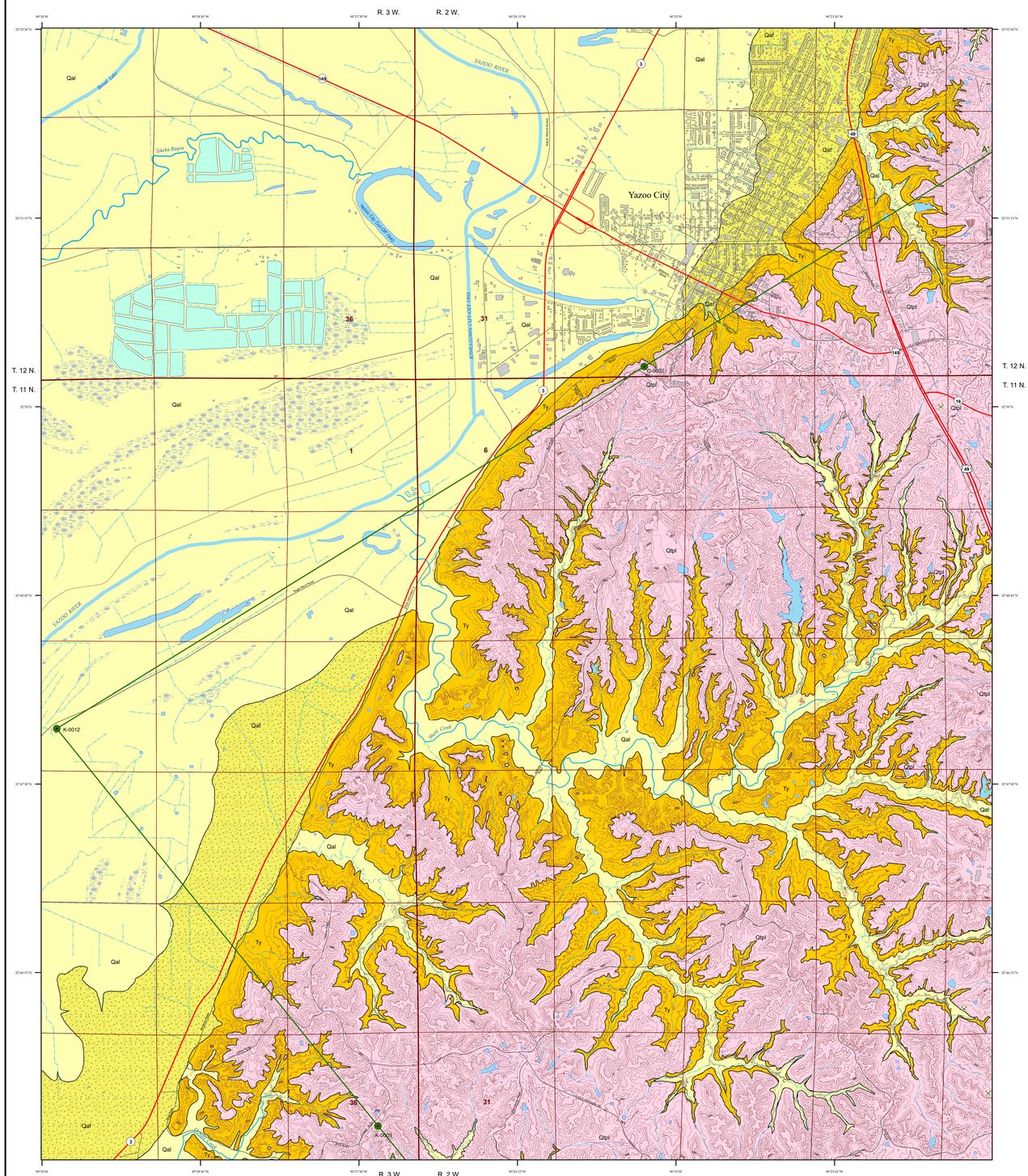
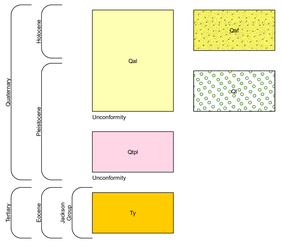
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY SURFACE MAPPING DIVISION
MISSISSIPPI GEOLOGICAL SURVEY

Prepared in cooperation with
THE UNITED STATES GEOLOGICAL SURVEY
NATIONAL GEOLOGIC MAPPING PROGRAM

GEOLOGIC MAP OF THE 7.5-MINUTE YAZOO CITY QUADRANGLE OPEN-FILE REPORT 320



Correlation of Map Units



K-0012 — Drill-hole locality and identification number

Surface mines

Contact

A — A' Line of Section

Descriptions of Map Units

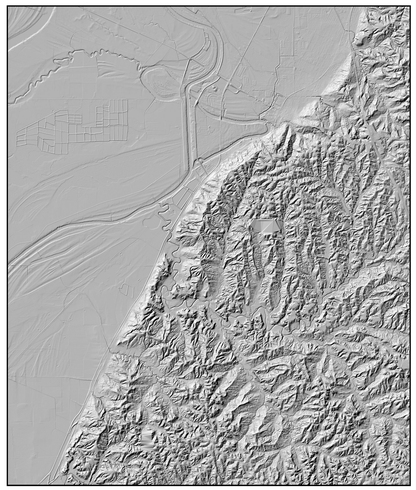
Alluvium Qal
Flood plain sands, silts, gravels, and clays.

Alluvial Fans Qaf
Alternating silts, sands, and gravels. Coarsest at the apex of the fan, fining laterally (radially) from the apex of the fan.

Loess
Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose to feldspathic. Loess is an eolian deposit derived from glacial outwash. 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 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 grades into the sands and gravels of the Pre-loess terrace deposits. Loess can be locally and sparingly fossiliferous, commonly containing tests or steinkerns of pulmonate gastropods and less commonly containing fossils of Pleistocene vertebrates such as mastodon, tapir, and ground sloths.

Pre-loess Terrace Deposits Qtpl
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 Cockfield Formation 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.

Yazoo Formation (Yazoo Clay) Ty
Clay, calcareous, montmorillonitic, and blue-green color unweathered, marine shell hash common along partings; weathers tan to yellowish-brown with caliche common. Locally fossiliferous: containing beds of the oyster *Pycnodonte trigonalis* and vertebrate remains of the archaeocete whales *Zygorhiza kochii* and *Basilosaurus cetoides*. Selenite locally along joints where clay is framboidally pyritiferous.



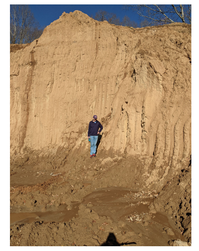
Bare Earth LIDAR Hillshade for the Yazoo City 7.5 Minute Quadrangle.

1:70,000
1 inch = 5,833 feet
1 0.5 0 1 Miles

Upper (top) and lower (bottom) teeth of *Carcharodon angustidens* Agassiz, 1843. Figure 1 is from the Yazoo Clay in Yazoo City. Figure 2 is from the Byram Formation north of Redwood in Warren County. Figure 3 is from the Yazoo Clay in Yazoo City. Figure 4 is from the Byram Formation at Vicksburg and is the largest shark tooth known from Mississippi. Figure 5 is from the Yazoo Formation at Jackson and is the longest shark tooth known from Mississippi. These teeth were first illustrated in the September 1986 issue of Mississippi Geology.

A fresh exposure of Yazoo Clay in the active channel of O'Neil Creek south of Yazoo City in T.11N. R.3W. Section 34, photographed March 5, 2021.

Jointing in weathered Yazoo Clay at the Yazoo City Rubbish Pit. T.11N. R.2W. Section 6, photographed January 5, 2021.



James Starnes standing in front of freshly excavated loess near US Hwy 49 in Yazoo City, T.11N. R.2W. Section 14, photographed January 5, 2021.

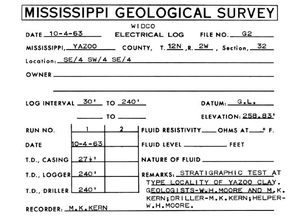
Fossil pulmonate gastropods typical of loess near US Hwy 49 in Yazoo City, T.11N. R.2W. Section 14, photographed January 5, 2021.

James Starnes standing at a vertical loess road cut near US Hwy 433, photographed January 5, 2021.

Pre-loess gravels overlain by loess on US Hwy 49 south of Yazoo City, photographed August 14, 2004.

James Starnes at a backfilled gravel pit where the unconformable contact between loess and Pre-loess gravels is exposed near US Hwy 49 in Yazoo City, T.11N. R.2W. Section 14, photographed January 5, 2021.

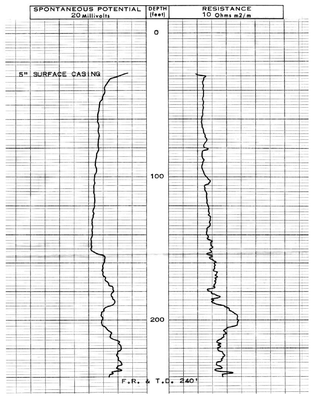
Jonathan Leard pointing to the unconformable contact between loess and Pre-loess gravels near US Hwy 49 in Yazoo City, T.11 N. R.2 W. Section 14, photo-graphed January 5, 2021.



MISSISSIPPI GEOLOGICAL SURVEY
WDDO
DATE 10-4-63 ELECTRICAL LOG FILE NO. G2
MISSISSIPPI, YAZOO COUNTY, T. 12N, R. 2W, Section, 32
Location: SE/4 SW/4 SE/4
OWNER
LOG INTERVAL 30' TO 240' DATUM: G.L.
TO ELEVATION: 258.83'

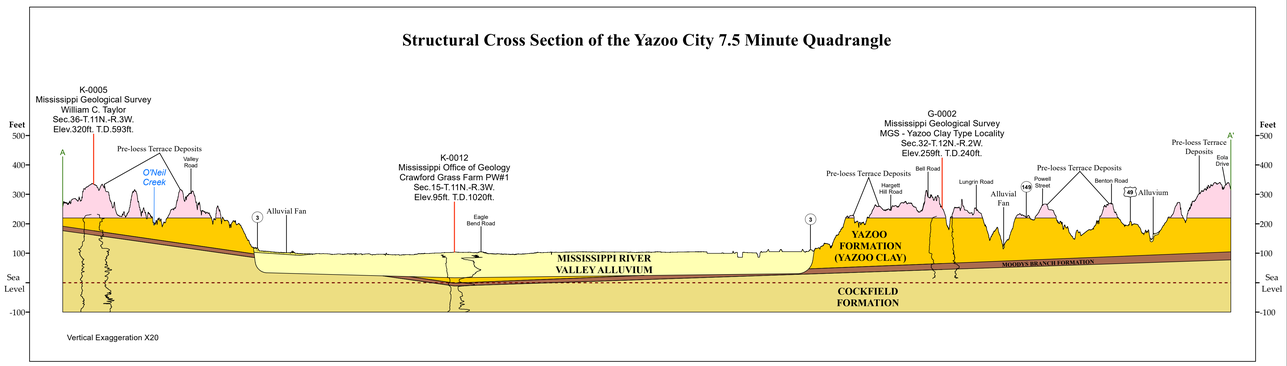
RUN NO.	1	2
DATE	10-4-63	
T.D., CASING	27½'	
T.D., LOGGER	240'	
T.D., DRILLER	240'	

FLUID RESISTIVITY OHMS AT F.
FLUID LEVEL FEET
NATURE OF FLUID
REMARKS: STRATIGRAPHIC TEST AT TYPE LOCALITY OF YAZOO CLAY.
GEOLOGISTS-W.H. MOORE AND M.K. KERN; DRILLER-M.K. KERN; HELPER-W.H. MOORE.
RECORDED: M.K. KERN



The geophysical log of the Stratigraphic Test at the type locality of Yazoo Clay drilled October 4, 1963.

Structural Cross Section of the Yazoo City 7.5 Minute Quadrangle



Vertical Exaggeration X20

Base Map produced by the Mississippi Geological Survey

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere; **Datum:** WGS 1984; **Units:** Meter
Declination: January 01, 2021, magnetic north declination in quadrangle center is 1°5' West of true north, changing by 0°6' West per year.
Lidar: Mississippi Department of Environmental Quality (MDEQ), U.S. Army Corps of Engineers (USACE), United States Geological Survey (USGS), Natural Resources Conservation Service(NRCS), Federal Emergency Management Agency(FEMA), National Oceanic and Atmospheric Administration(NOAA), National Park Service (NPS), and Tennessee Valley Authority (TVA). Project span 2005-2017.
Hydrography: Lidar derived; National Hydrography Dataset (NHD) 2020
Contours: Lidar derived
Roads: Mississippi Department of Transportation (MDOT) 2018
PLSS Boundaries: Mississippi Automated Resource Information System (MARIS) 2020
Building Footprints: Microsoft 2019
Surface Mines: MDEQ Office of Geology - Mining and Reclamation Division
Boreholes: MDEQ Office of Geology - Environmental Geology Division

Reference Scale: 1:24,000

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

Contour Interval: 20 Feet

GEOLOGIC MAP of the YAZOO CITY QUADRANGLE

Yazoo County, Mississippi

2021

Geology by

James E. Starnes, RPG

and Jonathan R. Leard, GIT

This geologic map was funded in part by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under STATEMAP award number G20AS00006.

MDEQ-GEOLOGY Geographic Information Systems: Daniel W. Morse
MDEQ-GEOLOGY Drillers: Archie Mckenzie and Trey Magee
MDEQ-GEOLOGY Geophysical Logging: Andrew Newcomb and Paul Parrish

Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes. The views and conclusions contained in this Open-File Report are those of the geologists and should not be interpreted as representing the official policies, either expressed or implied, of the State of Mississippi or of the United States Government.

Adjoining 7.5' Quadrangles

Louise	Carter	Eden
Bayland SE	Yazoo City	Benton
Satartia	Tinsley	Bentonia