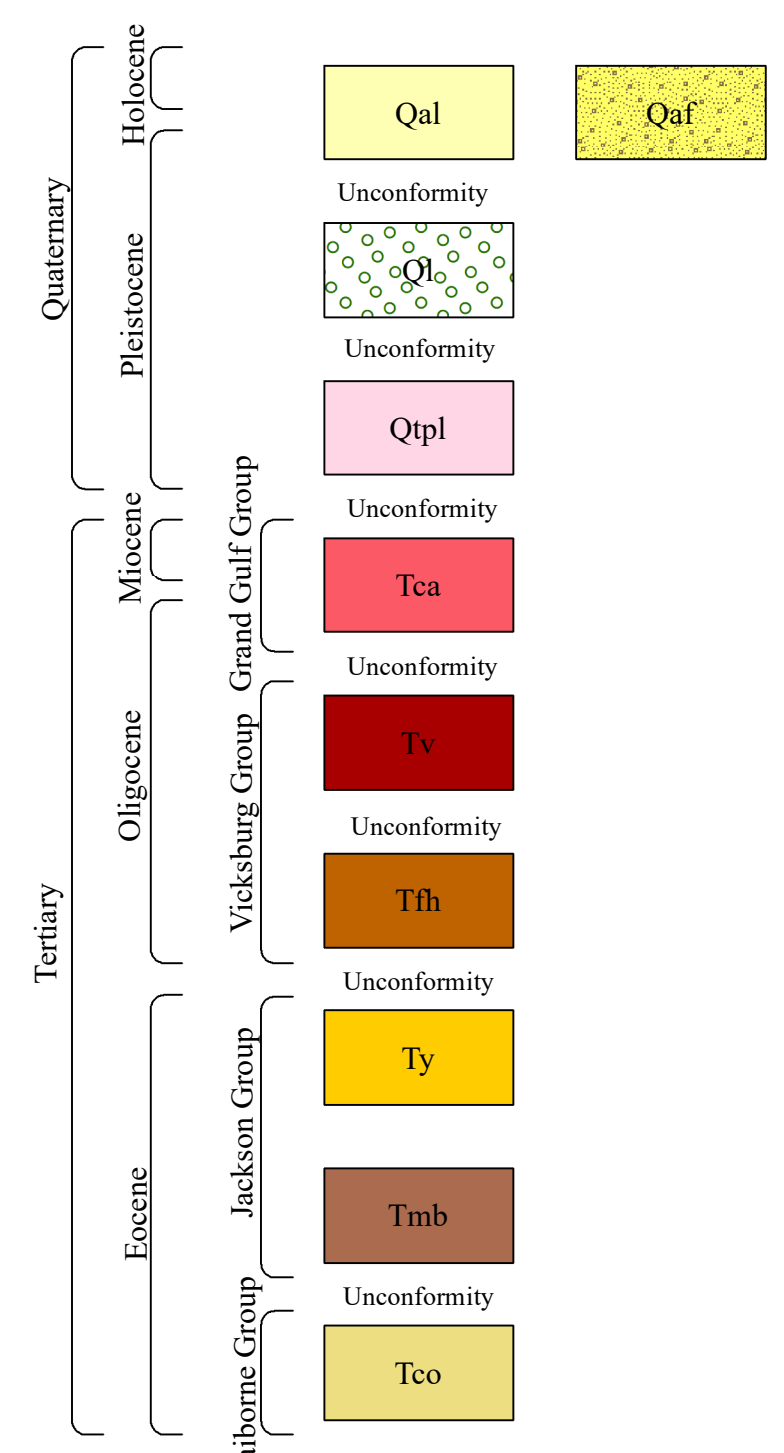


Correlation of Map Units



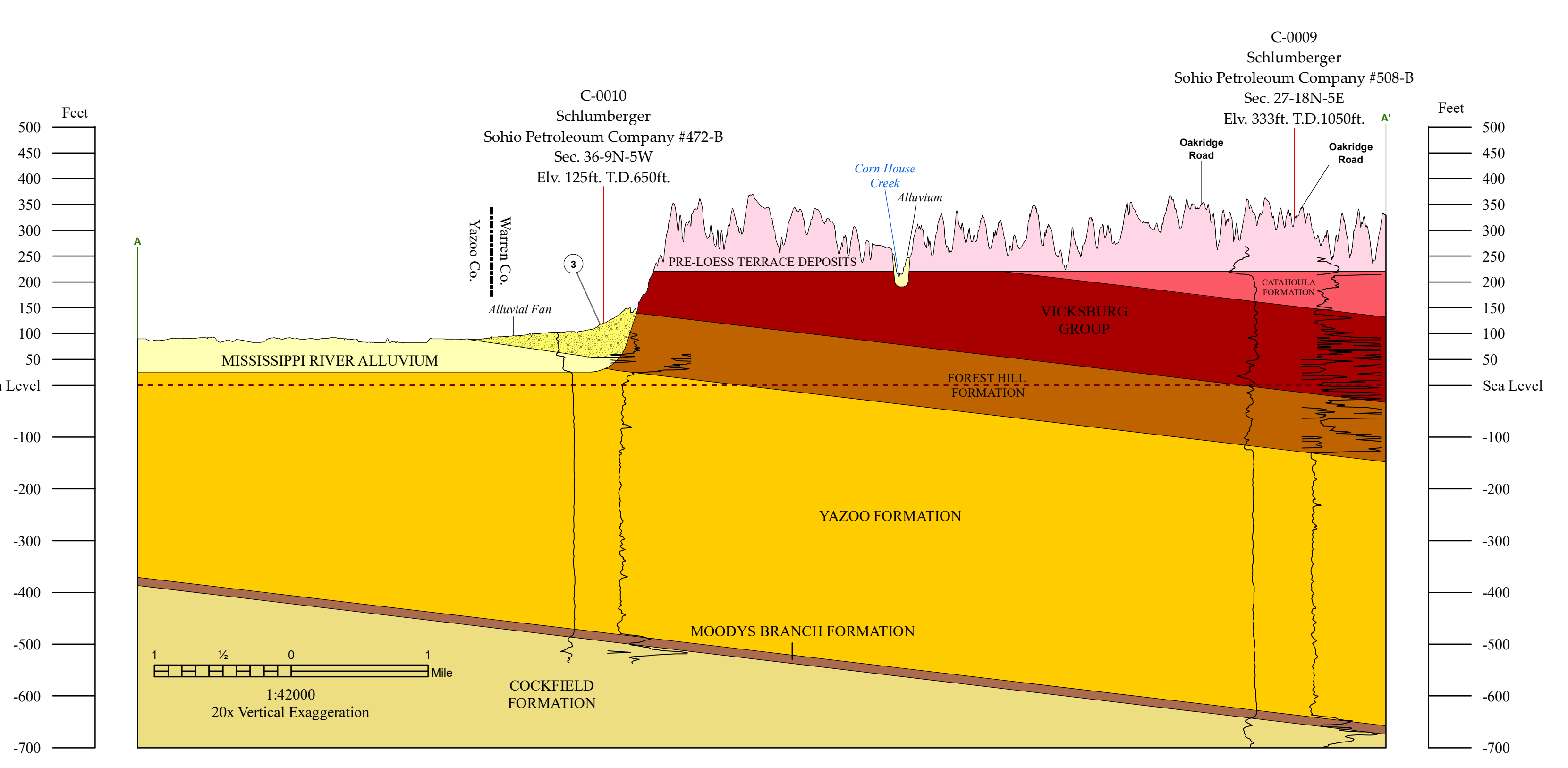
Descriptions of Map Units

- Qal Alluvium (Holocene to Pleistocene)**
Sand, yellow- to brownish-white in color, fine- to coarse-grained, subrounded to rounded, predominantly quartzose, locally graveliferous containing aggregate derived from the Pre-Loess Terrace deposits, silty to clayey; humus lenses common; floodplain deposits are heavily loess-derived. Silicified wood common. Tributaries have narrow alluvial valleys and are deeply incised through the loess terrain. Stream Alluvium thickness is interpreted to be approximately 10 feet. The Mississippi River Alluvium thickness can be greater than 100 feet.
- Qaf Alluvial Fans (Holocene to Pleistocene)**
Alternating silts, sands, and gravels deposited by streams entering the Mississippi River Alluvial Plain from the adjacent uplands. Coarsest at the apex of the fan, fining laterally (radially) from the apex of the fan. Alluvial fans interfingering with the Mississippi River Alluvium and are a significant source of recharge for the Mississippi River Alluvial Aquifer. Typically, the basal sand gravels of the Mississippi River alluvium beneath the alluvial fan can be recognized by the presence of numerous granite and metamorphic rock clasts.
- Loess (Pleistocene)**
Silt, buff to tan, pale yellow, red, grey to grey-green where in anoxic conditions, quartzose to feldspathic. Loess is considered an eolian deposit derived from glacial outwash. Loess is typically calcareous with dolomite and calcite; however, the upper portion of the loess can be deeply weathered, leached / noncalcareous, and has been commonly referred to as "brown loam". Loess deposits unconformably blanket the pre-loess topography with substantial local variations in thickness but generally thickening towards the west. In places, weathered loess contains secondary deposits of small calcareous concretions (caliche, loess dolls). Loess can be locally and sparingly fossiliferous, commonly containing tests or stemmers of pulmonate gastropods and less commonly containing fossils of Pleistocene vertebrates.
- Qtp1 Pre-loess Terrace Deposits (Pleistocene)**
Pleistocene ancestral Mississippi River terraces deposited prior to Pleistocene incision. Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to large cobble size clast, boulder size ice-rafted clasts of sandstone and chert. Economically significant 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 up to boulder-size. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the deposits. The base of this terrace occurs at approximately 220 ft MSL.
- Tca Grand Gulf Group**
- Catahoula Formation (Oligocene)**
Deltaic sands, silts, and clays; Sand, grey, pale yellow to white, fine- to coarse-grained, cross-bedded to massive, predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places with rare thinly-bedded pea gravels. Gravels, black chert and milky quartz, highly polished, immature, subangular to well rounded; Clay, grey, brown, kaolinitic, weathers white to brown exhibiting a "popcorn" appearance, silty to sandy, lignite common in basal clays. Often indurates to opaline-cemented sandstones and rarer orthoquartzites where exposed, silicified wood and fossil *Palmoxylon* common. Ironstone common where sands overlie clays. The Catahoula Formation unconformably overlies the Bucatunna Formation. Total thickness is not represented on this map.
- Vicksburg Group**
- Vicksburg Limestone Undifferentiated (Oligocene)**
Includes the Bucatunna Formation, Byram Formation, Glendon Limestone, Marianna Limestone, and Mint Spring Formation. The Bucatunna is predominantly dark brown carbonaceous clay with thinly interbedded fine sands. It contains sparse estuarine mollusks towards its base and carbonized palaeobotanical fossil remains are common throughout. The Glendon Limestone is white to grey, commonly indurated to semi-crystalline bioclastic limestone, either massive or with alternating ledges separated by thinly-bedded glauconitic marl. The Glendon Limestone commonly contains solution cavities at or near outcrop. Larger cavities usually form at the contact with the underlying Marianna Limestone. The Marianna Limestone is white to pale-yellow, soft to indurated, glauconitic marl, containing an admixture of fine-grained sands and clays in places. There is an abundance of the large Foraminifera *Lepidocyclina mantelli* in the Marianna Limestone and *Lepidocyclina sapora* in the Glendon Limestone and the echinoid *Clypeaster rogersi*. Mint Spring Formation is a fossiliferous, fine-grained quartz marly sand containing the cassidulid echinoid *Rhyncholampas gouldii*. The Vicksburg Limestone unconformably overlies the Forest Hill Formation. Thickness is approximately 150 feet.
- Tfb Forest Hill Formation (Oligocene)**
Deltaic sands, silts, and clays. Sand, fine-grained, silty, quartzose; Clay, carbonaceous, laminated, lignite and silicified wood common, including *Palmoxylon*. Lignite with palaeobotanical fossil remains common along fissile partings in clays. The Forest Hill Formation unconformably overlies the Yazoo Formation. Total thickness is approximately 120 feet.
- Tc Yazoo Formation (Eocene)**
Locally referred to as the Yazoo Clay. Clay, bluish-green to bluish grey, weathers yellowish brown to tan, montmorillonitic, calcareous, silty, locally fossiliferous, locally contains framboidal pyrite. The fossil oyster *Pycnodonta irregularis* are common throughout along with fossil vertebrate remains of Archaeocete whales, sharks and fish. The Yazoo Formation conformably overlies the Moodys Branch Formation. Total thickness is approximately 500 feet.
- Tmb Moodys Branch Formation (Eocene)**
Sandy fossiliferous marl containing an abundance of marine invertebrates, particularly shells of *Glycymeris idonea* and *Venerocardia apodensata*. Conformably grades into the overlying Yazoo Formation. Total thickness is approximately 15 feet.
- Tcb Claiborne Group**
- Tco Cockfield Formation (Eocene)**
Clay, brown, reddish-brown to grey in color; silty to fine sandy; strongly carbonaceous to lignitic, slightly micaceous, pyritic. Carbonized and silicified palaeobotanical fossil remains common. Dominated by deltaic sands towards the base. Underlies the Moodys Branch Formation unconformably.

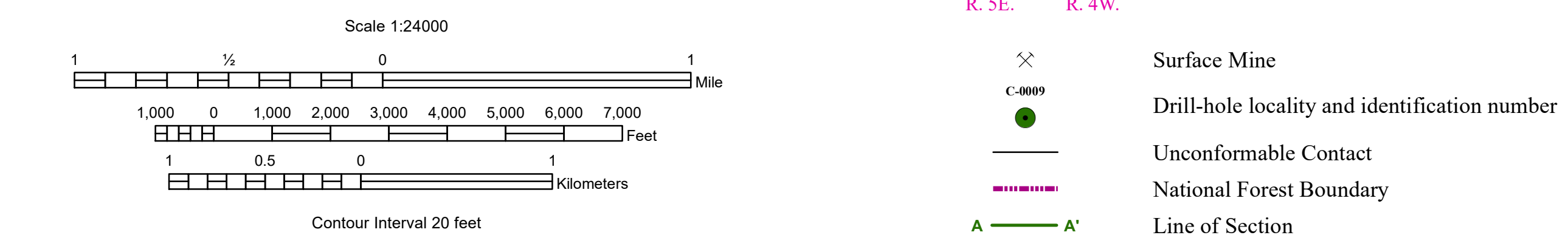
Field Photographs



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



Base Map produced by the Mississippi Geological Survey
Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Declination: World Magnetic Model, 2020, estimated Magnetic North declination in 7.5-Minute Eldorado Quadrangle (90°41'20.4"W, 32°33'43.2"N) center area is 1.20° west of True North ± 0.36°. Annual rate of declination change is approximately 0.09° west per year.
Base map Data sourced from <https://naris.mississippi.edu/>.
Contours are derived from LIDAR data.
Borehole data from Mississippi Office of Geology.

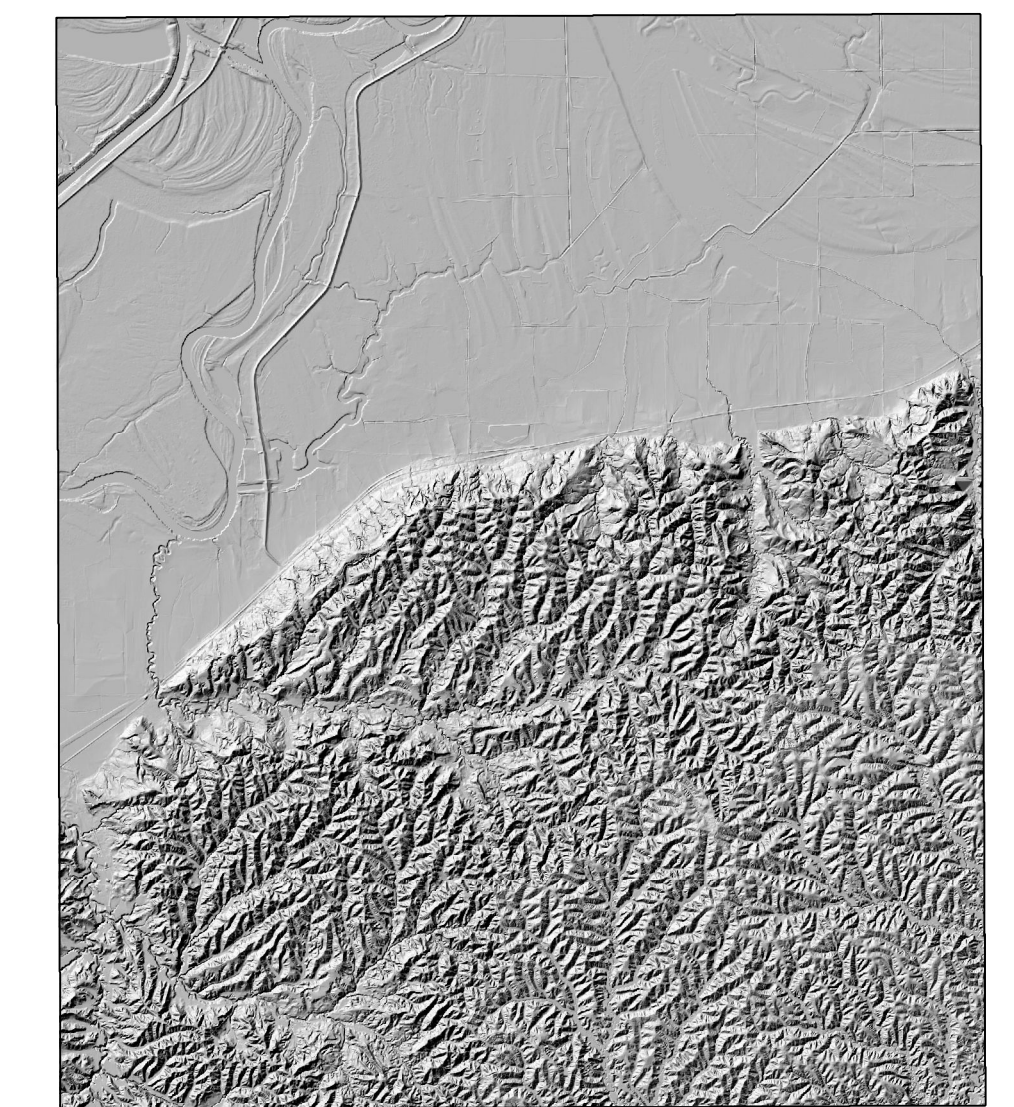


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**GEOLOGIC MAP of the ELDORADO
7.5-MINUTE QUADRANGLE**
Warren, Yazoo, and Issaquena Counties, Mississippi
2024

Geology by
Jonathan R. Leard, RPG, Timothy J. Palmer, RPG, James E. Starnes, RPG, and Bailee M. Ozbirn



Adjoining 7.5' Quadrangles

VALLEY PARK	LEURE	SARTARIA
FLOWERS	ELDERMAN	PHOENIX
REDFORD	OAK RIDGE	OSBORN HILL LAKE

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