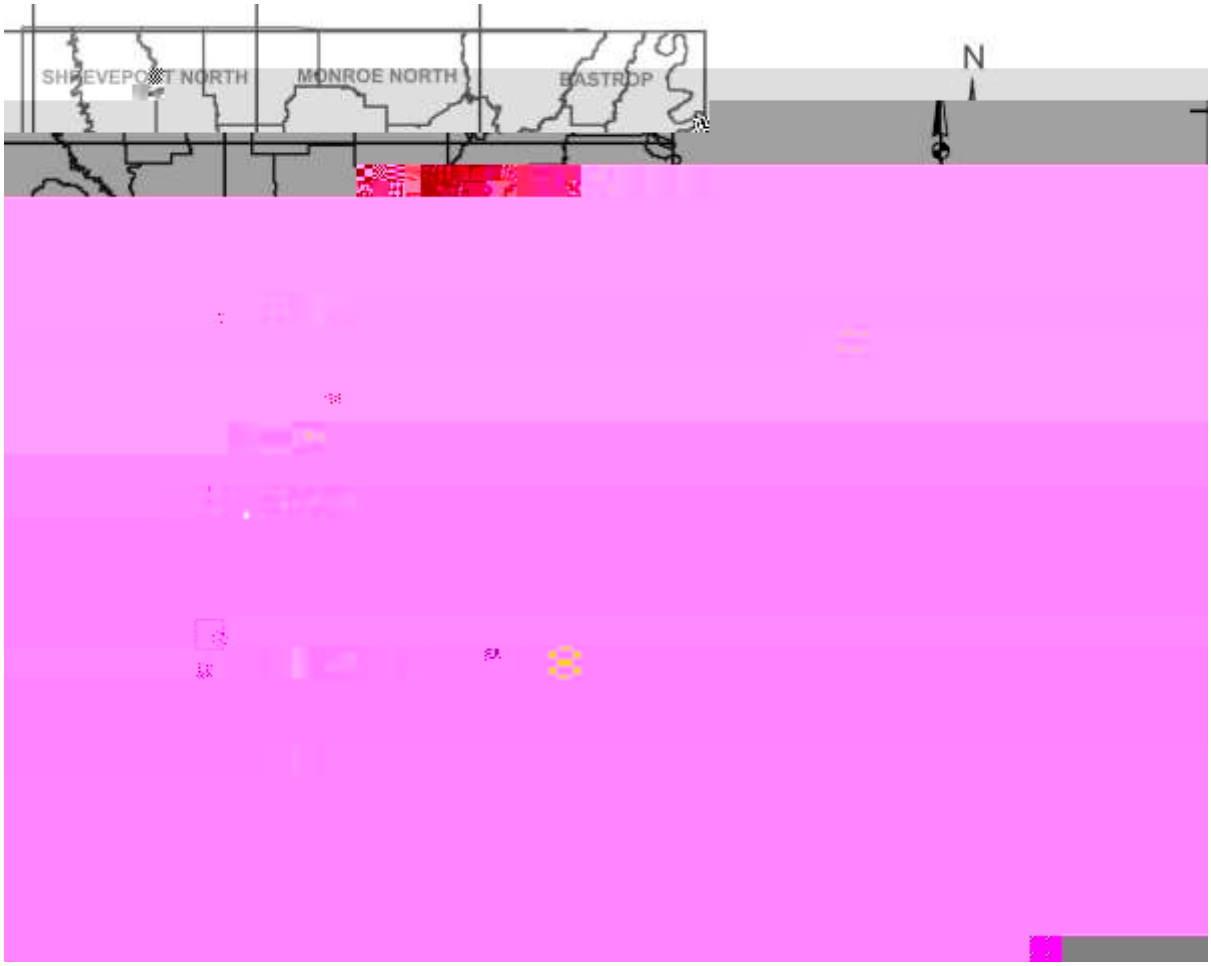
south Louisiana surface faults generally as reactivated Paleogene and Neogene growth faults originally mapped in the subsurface in connection with oil and gas exploration.

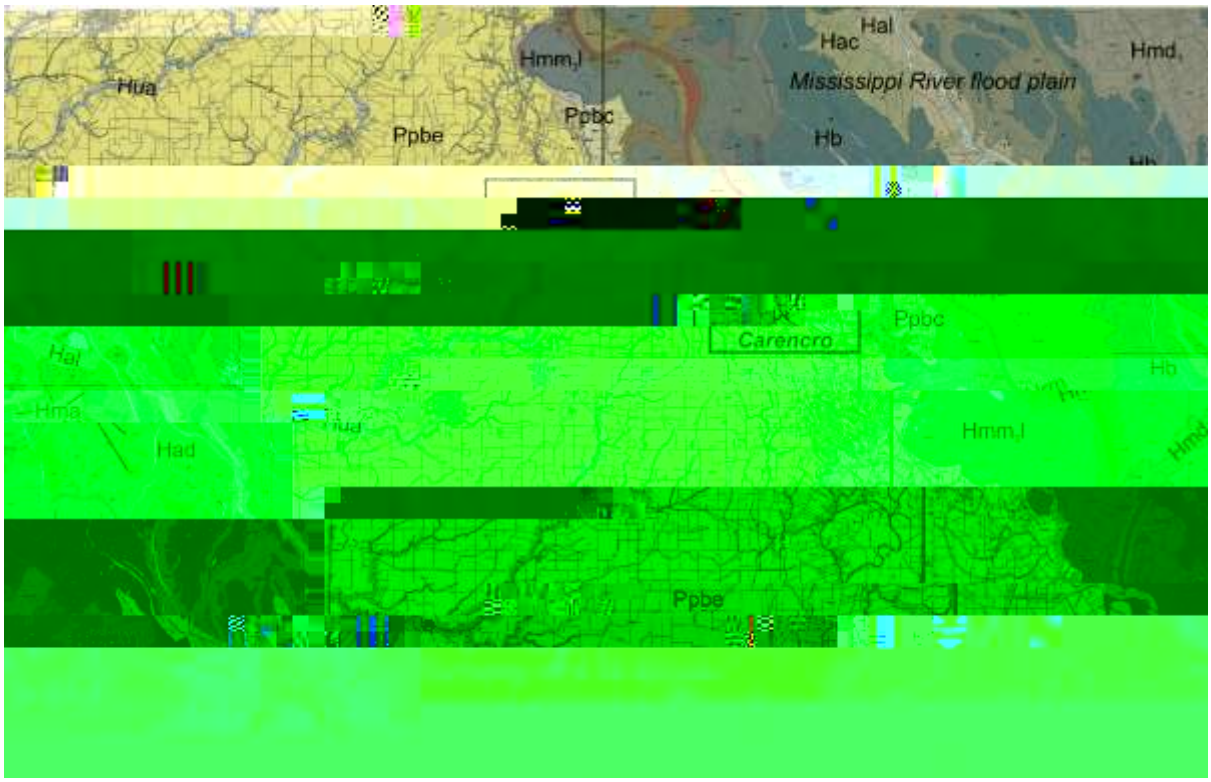
The lower Pleistocene Chicot aquifer of southwestern Louisiana underlies the study area, is the principal source of ground water for 13 parishes in southwestern Louisiana, and has prompted numerous previous groundwater investigations. Most recently, Tomaszewski et al. (2002) detailed groundwater conditions pertinent to the Chicot aquifer; Milner and Fisher (2009) chronicled in detail the geological framework and groundwater hydrology of the aquifer; and Van Biersel and Milner (2010) summarized distribution, recharge area, proportions of water-use categories, and pumpage rates.

Methods

The investigators reviewed legacy information and made new interpretations consulting remotely sensed imagery (comprising aerial photography, lidar DEMs, and other sources) and soils databases published by the Natural Resources Conservation Service (NRCS) to develop a draft surface geology layer for the study area. Field work was conducted to access commercial excavations deeper than the thickness of the loess cover, to observe and describe the texture and composition of the surface-geologic map units. Field observations were then synthesized with subsurface information from operators of pits and landfills, and with the draft surface geology, to prepare an updated integrated surface geology layer for the 7.5-minute quadrangle.



1. Location of Carencro 7.5-minute quadrangle, southwestern Louisiana.


Hua
Hmm,l
Ppbe
Ppbc
Hac
Hal
Hmd,
Mississippi River flood plain
Hb
Carencro
Had

2.

QUATERNARY SYSTEM

HOLOCENE

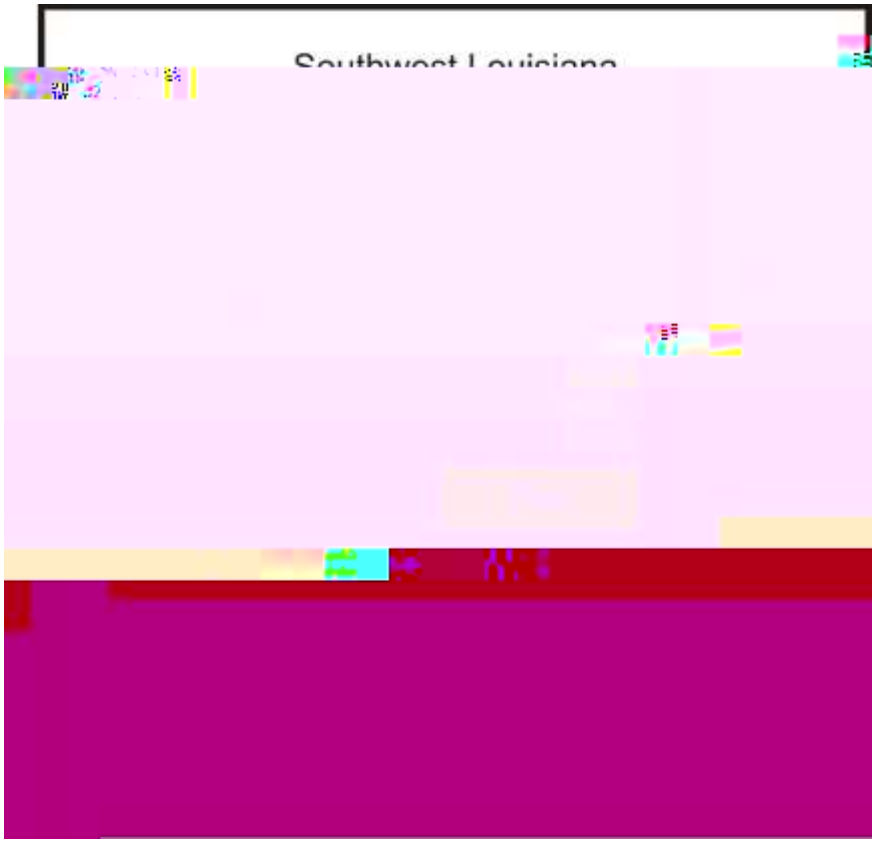
Hua Holocene undifferentiated alluvium

PLEISTOCENE

LOESS
[pattern] Peoria Loess

PRAIRIE ALLOGROUP
Ppbcu Upper Big Cane alloformation
Ppbcl Lower Big Cane alloformation
Ppav Avoyelles alloformation
Ppbe Beaumont Alloformation

3. Units mapped in the Carencro 7.5-minute quadrangle.



4. Correlation of strata mapped in the Carencro 7.5-minute quadrangle.

Allostratigraphic Approach to Pleistocene Unit Definitions

In the late 1980s the LGS had begun exploring the application of allostratigraphic concepts and nomenclature to the mapping of surface Plio Pleistocene units (e.g., Autin, 1988). In Louisiana these units show a series of geomorphic attributes and preservation states correlative with their relative ages, which eventually led LGS to conclude that allostratigraphy offers an

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