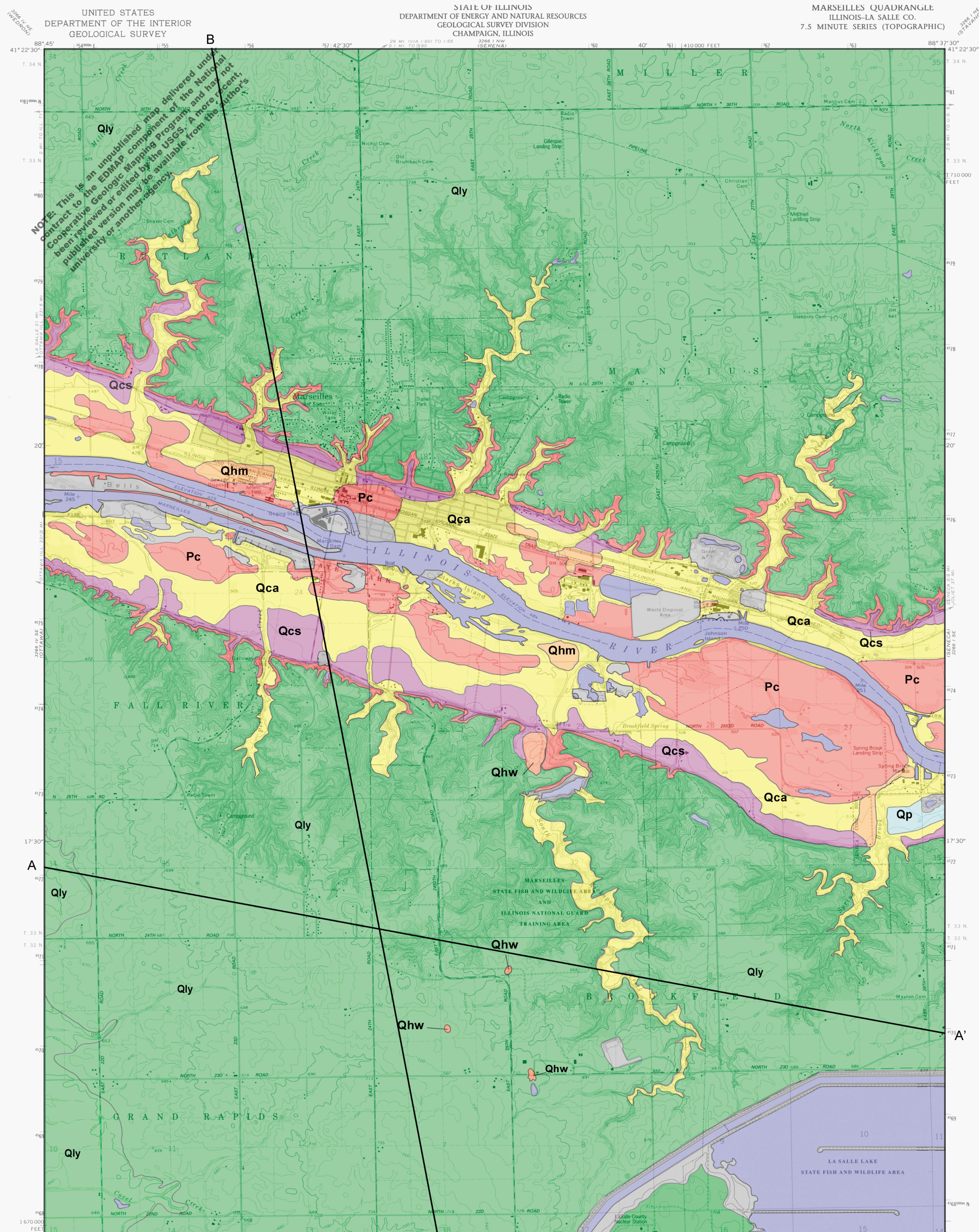


Plate 1

Surficial Geologic Map Marseilles Quadrangle, LaSalle County Illinois Timothy A. Walls 2004



Material

dark gray to black stratified silt, sand, and some gravel

undifferentiated masses of up slope erosional material

sand and gravel outwash on floodplains

sand and gravel outwash on moraine

ground moraine material (fine grained matrix diamicton)

gray diamicton (silty clay loam matrix), weathers to a brown-tan color

sand and gravel outwash found as fill material in the Ticona Channel

alternating sandstone, shale, coal, limestone

fine to medium grained limestone and dolomite, chert nodules present

Lithostratigraphic Units and Interpretations

HOLOCENE

Qca Cahokia Alluvium: Modern stream deposits which occur in river and tributary valleys. Thickness: 0-6m.

Qcs Slump Deposits: Material washed down from higher parts of the slope. Thickness: (0-8m).

PLEISTOCENE

Wisconsinan Episode

Mason Group

Henry Formation

Qhm Mackinaw Member: Outwash on floodplains. Thickness: 0-3m.

Qhw Wasco Member: Ice contact material in kames, kame terraces, and eskers. Thickness: 0-2m.

Lemont Formation

Qly Yorkville Member: Intermorainal material, Thickness: 0-30m.

Qly Yorkville Member: Morainal deposits occur throughout a majority of the area, Thickness: 0-40m.

pre-Illinoian to Illinoian Episode

Qp Pearl Formation: outwash material composed of sand and gravel, Thickness: 0-10m locally.

PALEOZOIC

Pennsylvanian

Pc Carbondale Formation: Major cliff former in places along Illinois River and its tributaries. (cyclic deltaic environment) Thickness: 0-21m.

Ordovician

Opg Platteville-Galena Groups: Is not exposed in the area. Bedrock formed in marine environments.

Water: lakes and rivers.

Disturbed Areas: areas that have been mined or modified by human activity.

Geologic Contact

Approximate Contact

Certain units that are present within the area and warrant mention are the Cahokia Alluvium and the Peoria Silt. The criteria for mapping surficial deposits depend upon unit thickness of 1.5 m (5 ft). The flood plain of the Illinois River has variable thickness of alluvium. Exposures of Pennsylvanian bedrock occur where the alluvium is less than 1.5 m. Loess deposits of Peoria Silt blankets the entire area with a thin layer of wind blown material but was not mappable because unit thickness did not reach 1.5 m. Of further note, the Pearl Formation occurs as a sand and gravel outwash deposit and is the oldest Quaternary unit in the area. Active quarrying occurs at the Spicer Sand and Gravel pit along the southeast portion of the Illinois River Floodplain. No natural exposures of the Pearl exist in the Marseilles area.

Hansel, A.K., and Johnson, W.H., 1996. Wedron and Mason Groups: Lithostratigraphic Reclassification of Deposits of the Wisconsin Episode, Lake Michigan Lobe Area. Illinois State Geological Survey Bulletin 104. 116p.

Hart K., 2002. Surficial Geologic Map of the Ottawa Quadrangle, LaSalle County, Illinois. Scale 1:24,000

Lineback J.A., 1979. Quaternary Deposits of Illinois. Illinois State Geological Survey Map. Scale 1:500,000.

Nelson R.S., Malone, D.H., Jacobson, R.J., and Frankie, W.T., 1996. Guide to the Geology of Buffalo Rock and Matthiessen State Parks Area, LaSalle County, Illinois. Illinois State Geological Survey Fieldtrip Guidebook 1996c. 62p.

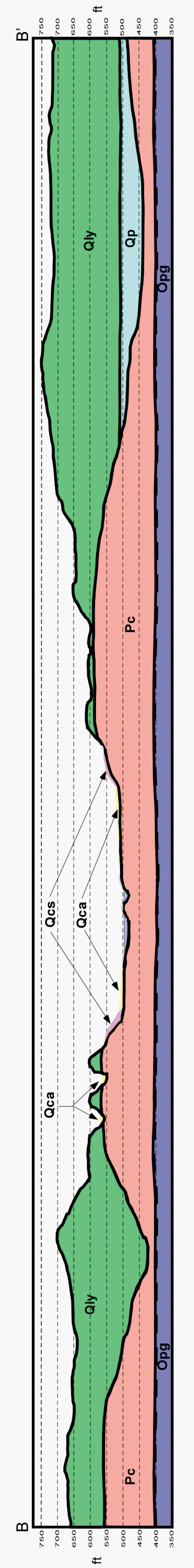
Thomason J., 2000. Surficial Geologic Map of the Starved Rock Quadrangle, LaSalle County, Illinois. Scale 1:24,000.

Willems B.A., 2004. Surficial Geologic Map of the Leonore Quadrangle, LaSalle County, Illinois. Scale 1:24,000.

Willman H.B., Atherton E., Buschbach T.C., Collinson C., Frye J.C., Hopkins M.E., Lineback J.A., and Simon J.A., 1975. Handbook of Illinois Stratigraphy. Illinois State Geological Survey Bulletin 95. 261p.

Willman H.B., and Others, 1967. Geologic Map of Illinois. Illinois State Geological Survey Map. Scale 1:500,000.

Willman H.B., Payne J. N., 1942. Geology and Mineral Resources of the Marseilles, Ottawa, and Streator Quadrangles, Illinois State Geological Survey Bulletin 66. Illinois State Geological Survey. 388p.



Produced by the United States Geological Survey
Control by USGS and NGS/NOAA
Topography by photogrammetric methods from aerial photographs taken 1967. Field checked 1970. Revised from aerial photographs taken 1968. Field checked 1993. Map revised 1994.
Projection and 10,000-foot grid ticks: Illinois coordinate system, east zone (transverse Mercator)
1:000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue
1927 North American Datum (NAD 27)
North American Datum of 1983 (NAD 83) is shown by dashed corner ticks
The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are given in USGS Bulletin 1875.
There may be private showings within the boundaries of the National or State Reservations shown on this map.
Red text indicates areas in which only landmark buildings are shown.
Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked.

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Interstate Route
Light duty road, hard or improved surface
Unimproved road
U.S. Route
State Route

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MARSEILLES, ILL.
41°08'00"N 88°37'30"W
1994
DMA 3266 1 SW, SERIES 9863