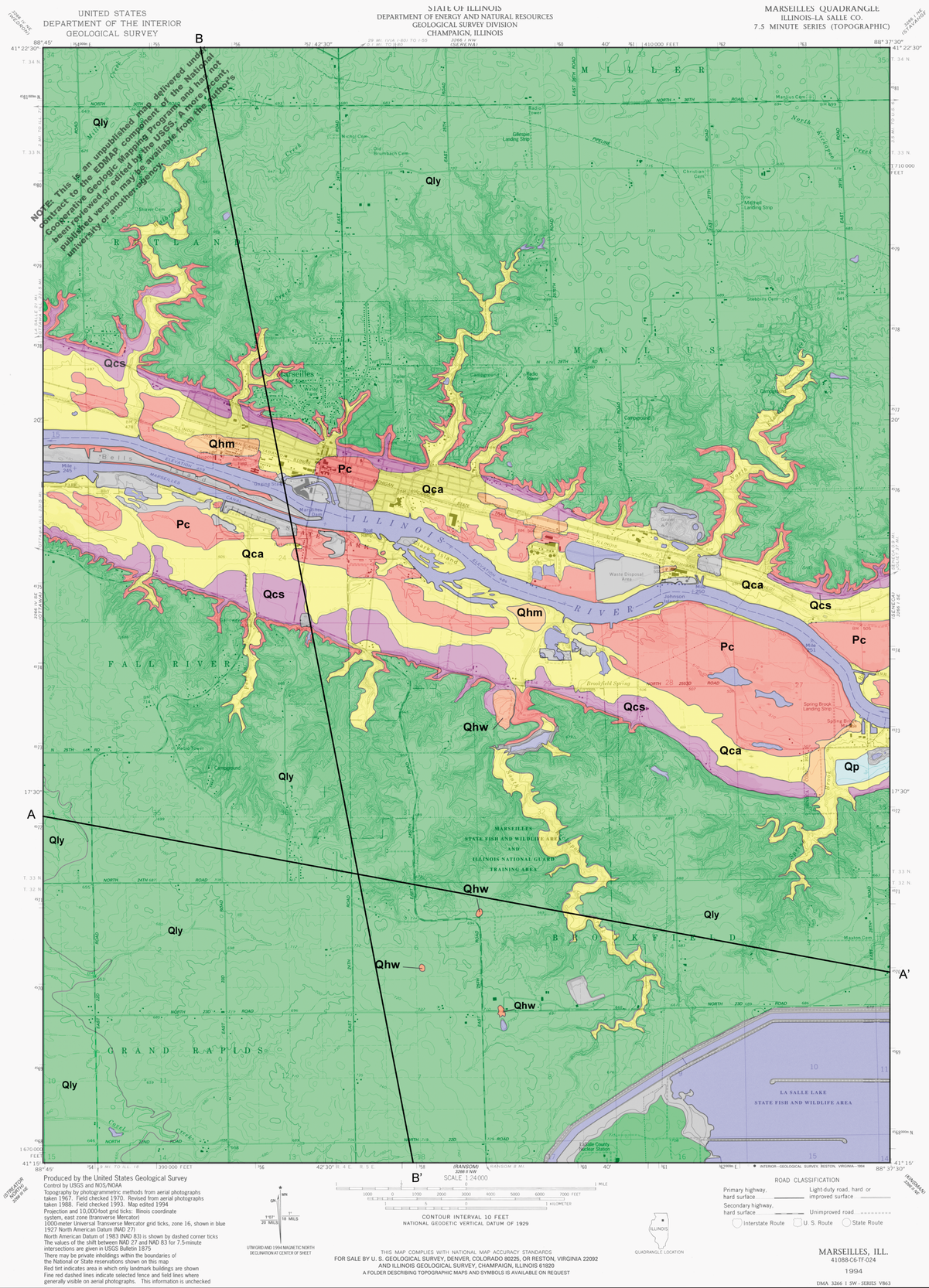
Plate 1



Surficial Geologic Map
Marseilles Quadrangle, LaSalle County Illinois

Timothy A. Walls

2004

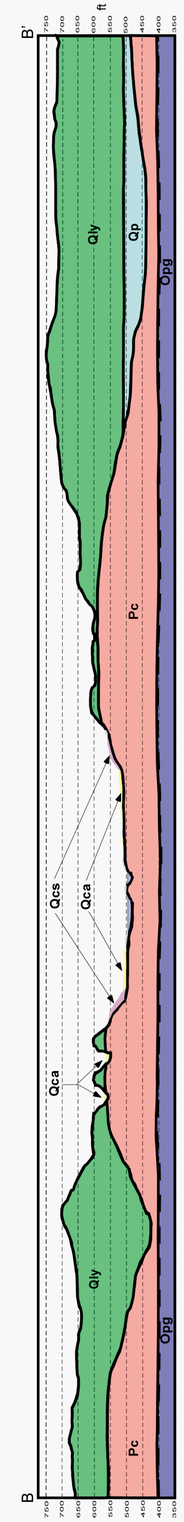
Material		Lithostratigraphic Units and Interpretations
		HOLOCENE
dark gray to black stratified silt, sand, and some gravel	Qca	**Cahokia Alluvium:** Modern stream deposits which occur in river and tributary valleys. Thickness: 0-6m.
undifferentiated masses of up slope erosional material	Qcs	**Slump Deposits:** Material washed down from higher parts of the slope. Thickness: (0-8m).
		PLEISTOCENE
		Wisconsinan Episode
		Mason Group
		Henry Formation
sand and gravel outwash on floodplains	Qhm	**Mackinaw Member:** Outwash on floodplains. Thickness: 0-3m.
sand and gravel outwash on moraine	Qhw	**Wasco Member:** Ice contact material in kames, kame terraces, and eskers. Thickness: 0-2m.
		Lemont Formation
ground moraine material (fine grained matrix diamicton)	Qly	**Yorkville Member:** Intermorainal material, Thickness: 0-30m.
gray diamicton (silty clay loam matrix), weathers to a brown-tan color	Qly	**Yorkville Member:** Morainal deposits occur throughout a majority of the area, Thickness: 0-40m.
		pre-Illinoian to Illinoian Episode
sand and gravel outwash found as fill material in the Ticona Channel	Qp	**Pearl Formation:** outwash material composed of sand and gravel, Thickness: 0-10m locally.
		PALEOZOIC
		Pennsylvanian
alternating sandstone, shale, coal, limestone	Pc	**Carbondale Formation**: Major cliff former in places along Illinois River and its tributaries. (cyclic deltaic environment) Thickness: 0-21m.
		Ordovician
fine to medium grained limestone and dolomite, chert nodules present	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, Ottowa, and Streator Quadrangles, Illinois State Geological Survey Bulletin 66. Illinois State Geological Survey. 388p.