

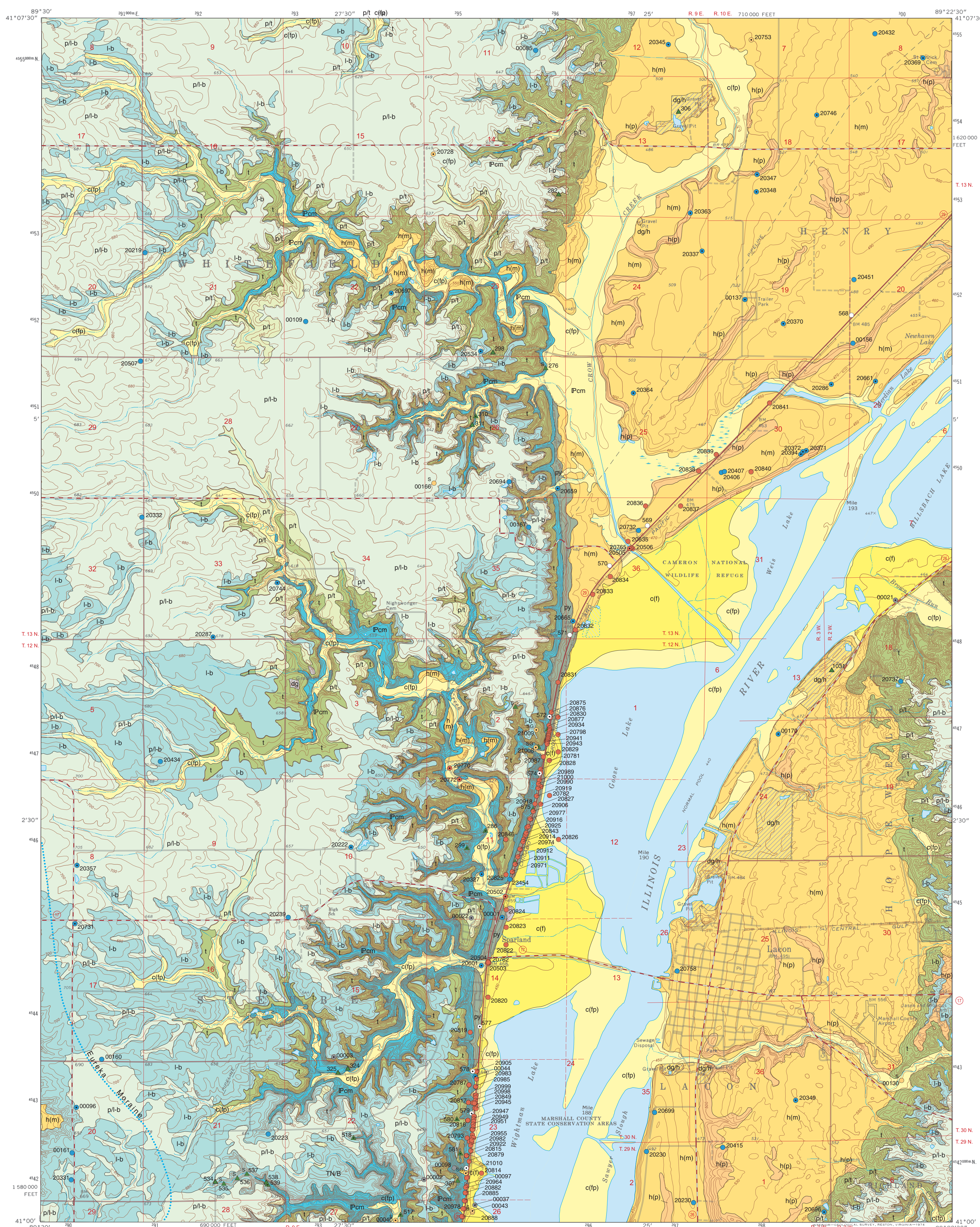
SURFICIAL GEOLOGY OF LACON QUADRANGLE

MARSHALL COUNTY, ILLINOIS

Illinois Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
William W. Shilts, Chief

E. Donald McKay III, Richard C. Berg, Andrew J. Stumpf, and C. Pius Weibel
2007

Illinois Preliminary Geologic Map
IPGM Lacon-SG



QUATERNARY DEPOSITS

| Description ¹ | Unit | Interpretation |
|---|---|--|
| HUDSON EPISODE (~12,000 years before present (B.P.) to today) | | |
| Areas of disturbed earth and/or removed earth; grain size ranges from clay to gravel, and may include waste or other rubble | Disturbed ground | Deposits disturbed or modified by human activity in gravel pits, coal mine spoil banks, earthen dams, other excavations, and landfills |
| Silt and clay with local surface occurrences of sand and gravel; typically grades at depth to sand and gravel, which may be indistinguishable from Henry Formation; stratified, brownish gray to gray; 5 to 50 feet thick | Cahokia Formation (floodplain facies) | Alluvium (river sediment); post-glacial overbank deposits on floodplains, natural levees, and in backwater lakes; coarse deposits in channels, point bars, and tributary streams |
| Silt and silty clay, interbedded with fine sand, and locally gravel and redeposited bedrock clasts; brownish soft to moderately stiff gray; calcareous or non-calcareous; typically overlies Cahokia or Henry Formations; interfingers with Cahokia floodplain facies; 5 to 30 feet thick | Cahokia Formation (alluvial fan facies) | Alluvial fan deposits; post-glacial redeposited loess and till in fans where streams and ravines emerge from uplands onto low-slope valley floors; subject to flooding |
| Silt, clay, sand, gravel and diamiction; unstratified to crudely stratified; yellowish brown to brownish gray; may include bedrock clasts; overlies Cahokia, Henry, or older glacial drift or bedrock; typically overlies Cahokia floodplain facies; 5 to 25 feet thick | Pepton Formation | Slopewash, talus, rock-fall, and slump deposits on or at base of steep slopes in small coalescing fans along bluff of Illinois River valley; post-glacial; may be poorly consolidated and unstable |
| WISCONSIN EPISODE (~12,000–75,000 years B.P.) | | |
| Sand; very fine to fine, well-sorted, and loose; yellowish brown to grayish brown; calcareous in lower part; conformably overlies Henry Formation; 5 to 15 feet thick | Henry Formation (Parkland facies) | Sand dunes, dune fields and sheet deposits of sand eroded from underlying outwash and redeposited locally on Illinois River terraces and uplands; proglacial and post-glacial |
| Sand and gravel with cobbles and boulders; stratified; yellowish brown to grayish brown; calcareous; usually clean and moderately well sorted; unconformably overlies older sand and gravel deposits, glacial diamiction, or bedrock; 10 to 20 feet thick in tributary valleys and 10 to 80 feet thick in Illinois River valley | Henry Formation (Mackinac facies) | Fluvial (riverine) and ice-marginal outwash deposits in Illinois River valley in terraces, former bars and channels and locally in terraces along tributaries to Illinois River; deposited proglacially by meltwater from distant glaciers; not consistently differentiable from Illinois Episode sand and gravel of the underlying Peaton Formation where intervening tills are absent |
| Pebbly silty clay loam diamiction; unstratified, olive (oxidized) to grayish brown (unoxidized); firm to hard; compact; calcareous; massive to jointed; some cobbles, few boulders; discontinuous beds of sand, gravel, silt, or clay; overlies in places by wind-blown silt (loess) of the Peoria silt; unconformably overlies Tiskiawa Formation or older units; 5 to 35 feet thick | Batestown Member, Lemont Formation | Till and associated sediment derived directly from glacial ice; overlain by thin covering of loess; occurs east of the western edge of the Eureka Moraine; absent in the Illinois River valley and tributary valleys, where removed by post-glacial erosion |
| Pebbly loam diamiction; unstratified, reddish brown (oxidized) to dark brownish gray with distinctive reddish cast (unoxidized); firm to hard, calcareous; some cobbles; few boulders; includes discontinuous beds of stratified sand, silt, or clay; lower 5 to 30 feet commonly more silty than upper part, usually lacks reddish cast, and may contain dispersed wood fragments and gastropod shells; unconformably overlies Ashmore Tongue (sand and gravel), Morton Tongue (silt), Foxana Silt, or older deposits; 25 to 120 feet thick | Tiskiawa Formation | Till and associated sediment derived directly from glacial ice; exposed in gullies, excavations and along steep slopes where overlying Peoria Silt and the Batestown Member have been eroded; occurs throughout the uplands of the area; absent in the Illinois River valley and tributary valleys, where removed by post-glacial erosion; where lower part of the unit is gray, the Delavan Member can be differentiated, and where it contains common wood fragments, the Oakland Member can be differentiated. |

PRE-QUATERNARY

| Description | Unit | Interpretation |
|---|---------------------------------------|---|
| PENNSYLVANIAN PERIOD (~280–315 million years B.P.) | | |
| Shale, clay, sandstone, limestone, coal | Carbondale and Modesto Formations | Lithified marine, estuarine, deltaic, fluvial and swamp deposits |

¹ Stratigraphic nomenclature follows that of Hansel and Johnson (1996) for Wisconsin and younger deposits and Wilman et al. (1975) for deposits older than Wisconsin Episode; within each unit, the components are listed in order of decreasing abundance.

² **Diamiction** is a name for an unsorted or poorly sorted, sedimentary deposit that contains a wide range of particle sizes, such as a till that contains clay, silt, sand, gravel, cobbles and boulders.

References

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

Wilman, H.B., E. Atherton, T.C. Buschbach, C. Collinson, J.C. Frye, M.E. Hopkins, J.A. Lineback, and J.A. Simon, 1975. Handbook of Illinois stratigraphy. Illinois State Geological Survey, Bulletin 85, 261 p.

Data Type

- Outcrop
- Stratigraphic boring
- Water boring
- Engineering boring
- Coal boring
- Hand-auger boring

Labels indicate samples (s) or geophysical log (g).
Numeric labels indicate the county number. Some county numbers are not shown in areas of closely spaced boreholes.
Outcrop and hand-auger boring labels indicate geologists' field number.
Dot indicates boring is to bedrock.

Contact

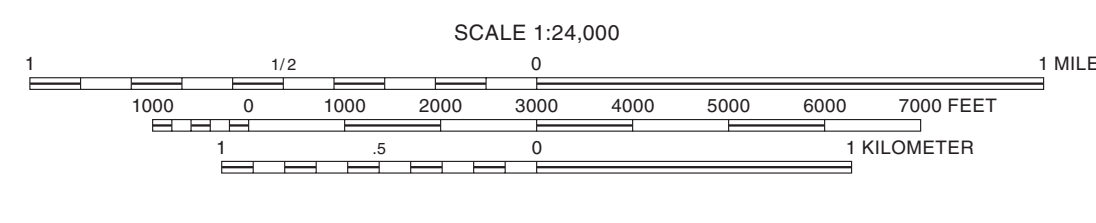
Crest of the Eureka Moraine

Note: The county number is a portion of the 12-digit API number on file at the ISGS Geological Records Unit. Online well and boring records are available from the ISGS Web site.

Base map compiled by Illinois State Geological Survey from digital data provided by the United States Geological Survey, Digital Line Graph data from 1994.

North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator
10,000-foot ticks: Illinois State Plane Coordinate system, west zone (Transverse Mercator)
1,000-meter ticks: Universal Transverse Mercator grid system, zone 16

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BASE MAP CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

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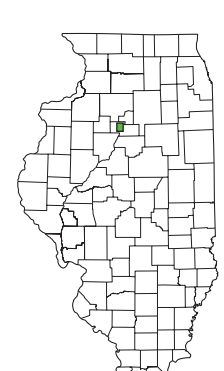
Geology based on field work by E.D. McKay, R.C. Berg, A.J. Stumpf, and C.P. Weibel, 2001–2003.

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Digital cartography by J. Carrell, J. Domier, and Z. Golshani, Illinois State Geological Survey. GIS support by P. Johnstone, L. Smith, and B. Stiff, Illinois State Geological Survey.

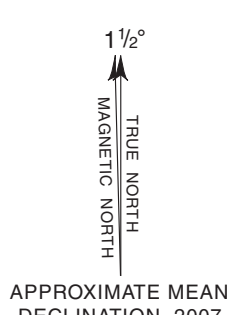
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| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | |
| 6 | 7 | 8 |

ADJOINING QUADRANGLES
1 Whitefield
2 Putnam
3 Flond
4 La Prairie Center
5 Henry
6 Rome
7 Chillicothe
8 Washburn



| ROAD CLASSIFICATION | |
|---|--|
| Primary highway, hard surface | |
| Secondary highway, hard surface | |
| Light-duty road, hard or improved surface | |
| Unimproved road | |
| State Route | |