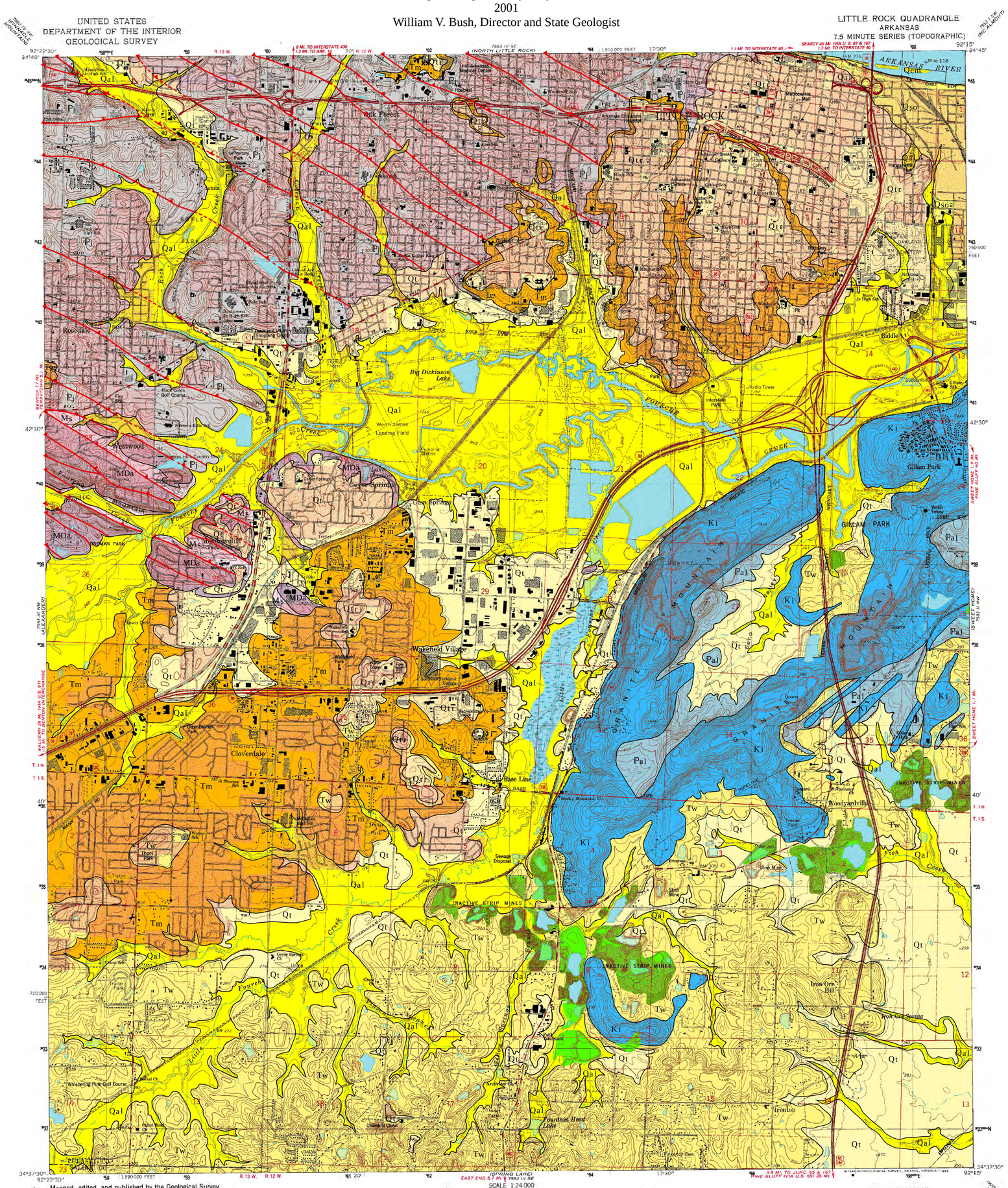
GEOLOGIC MAP OF THE LITTLE ROCK QUADRANGLE, PULASKI COUNTY, ARKANSAS

Geology by Boyd R. Haley and Charles G. Stone
Digital compilation by Jerry W. Clark
2001
William V. Bush, Director and State Geologist



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1960. Revised from aerial photographs taken 1984
Field checked 1985. Map edited 1986

Projection and 10,000-foot grid ticks: Arkansas coordinate system, south zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 15
1927 North American Datum
To place on the predicted North American Datum 1983, move the projection lines 7 meters south and 14 meters east as shown by dashed corner ticks

Red tint 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

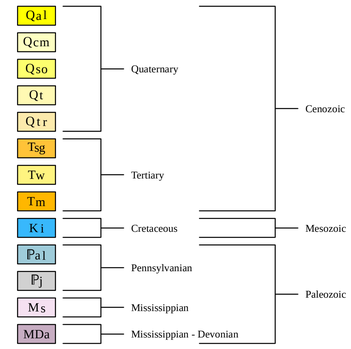
UTM GRID AND 1985 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND ARKANSAS GEOLOGICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ARKANSAS
QUADRANGLE LOCATION

Funded by the United States Geological Survey in cooperation with the Arkansas Geological Commission, under the COGEO Map Project

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qal **Alluvium** *(Quaternary)* – The deposits are alluvial deposits of present streams. Sediments will include gravels, sands, silts, clays, and mixtures of any and all of these. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than lithic or age considerations. Fossils are rare and modern. The lower contact is unconformable and the thickness is variable.

Qcm **Alluvium** *(Quaternary) (Channel Meander)* - This unit represents the more recent channel meanders and current flood plain deposits of significant streams. Channel meander scars are distinct in this unit. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than lithic or age considerations. Fossils are rare and modern. The lower contact is unconformable and the thickness is variable.

Qso **Alluvium** *(Quaternary) (Stream Overbank)* - Alluvial deposits of present streams, the overbank deposits of major streams, or older meander belt deposits of major streams make up this unit. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than lithic or age considerations. Fossils are rare and modern. The lower contact is unconformable and the thickness is variable.

Qt **Terrace Deposit** *(Quaternary)* – The terrace deposits include a complex sequence of unconsolidated gravels, sandy gravels, sands, silts, clayey silts, and clays. The individual deposits are often lenticular and discontinuous. At least three terrace levels are recognized with the lowest being the youngest. Fossils are rare. The lower contact is unconformable and the thickness is variable.

Qtr **Terrace** *(Quaternary) (Arkansas River Deposits)* - The terrace deposits include a complex sequence of unconsolidated gravels, sandy gravels, sands, silts, clayey silts, and clays. The individual deposits are often lenticular and discontinuous. At least three terrace levels are recognized with the lowest being the youngest. Fossils are rare. The lower contact is unconformable and the thickness is variable.

Tsg **Tertiary** *(Undifferentiated)* - Small fluvial sand and gravel deposits.

Tw **Wilcox Group** *(Tertiary)* - Wilcox is a thick series of non-marine sands, silty sands, clays, and gravels with some thick deposits of lignite. In central Arkansas, bauxite is found at the base of the Wilcox near Cretaceous age syenite knobs that were positive topographic features during Wilcox time. The sands are generally fine to very-fine grained and light gray in color when fresh. The clays are light gray or brown in color and often sandy or silty. Frequently, either lithology will be dark brown to black when enough carbonaceous material is included. The lignites occur throughout the sequence, controlled by depositional environment rather than stratigraphic position.

Tm **Midway Group** *(Tertiary)* – Midway sequence exposed at the surface in this area represents marine deposits of sandy calcareous clay and sandy fossiliferous limestone. Construction practices must account for the shrinking and swelling nature of clays in this unit.

Ki **Igneous Rock** *(Cretaceous)* – Includes undifferentiated altered sedimentary rocks of Paleozoic age in the Granite Mountain, Pulaski County area.

Pal **Atoka lower** *(Pennsylvanian)* - The lower Atoka is a sequence of marine, mostly tan to gray silty sandstones and grayish-black shales. Some rare calcareous beds and siliceous shales are known. This unit has the largest areal extent of any of the Paleozoic formations in the state.

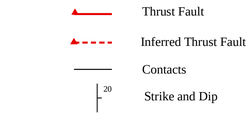
Pj **Jackfork Formation** *(Pennsylvanian)* - The Jackfork is thin to massive-bedded, fine to coarse-grained, brown, tan, or bluish-gray quartzitic sandstone with subordinate brown silty sandstones and gray-black shale.

Ms **Stanley Formation** *(Mississippian)* - Stanley is composed of dark gray shale interbedded with fine-grained sandstone.

MDa **Arkansas Novaculite** *(Mississippian-Devonian)* - Three divisions of the Arkansas Novaculite are recognized. The Lower Division is white massive-bedded novaculite with some interbedded gray shales near its base. The Middle Division is greenish to dark-gray shales interbedded with many thin beds of dark novaculite. The Upper Division is white, thick-bedded, and often calcareous novaculite.

Strip Mine

SYMBOLS



REFERENCES

Haley, B. R., and Stone, C. G., 1994 Geologic Map of the Little Rock Quadrangle, Pulaski County, Arkansas: AGC Open-File Report, scale 1:24,000.

McFarland, J. D., 1998, Stratigraphic Summary of Arkansas: Arkansas Geological Commission Information Circular 36, 39p.

Revision Date: September 2013
Revision by: Nathan H. Taylor