

GEOLOGIC MAP OF THE UMPIRE QUADRANGLE, HOWARD AND POLK COUNTIES, ARKANSAS

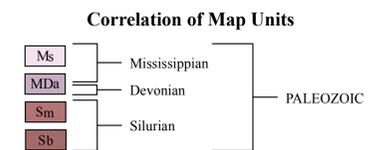
Geology by Boyd R. Haley and Charles G. Stone
Edited by William D. Hanson
1994

Arkansas Geological Commission, Bekki White, State Geologist
Digital Compilation by Nathan H. Taylor

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF ARKANSAS
GEOLOGICAL COMMISSION
LITTLE ROCK

UMPIRE QUADRANGLE
ARKANSAS
7.5 MINUTE SERIES (TOPOGRAPHIC)



- ### Description of Map Units
- Ms Stanley Formation (Mississippian)** - The formation is composed predominantly of grayish-black to brownish-gray shale, with lesser amounts of thin to massive-bedded, fine-grained, gray to brownish-gray feldspathic sandstone. Weathering causes the shale to turn olive-gray and the sandstone to become more porous and brown. Interbedded layers of thin black siliceous shale and chert are present and are used to subdivide the formation in other areas. Locally, volcanic tuffs (primarily the Hatton Tuff Member) and a quartzose sandstone-chert conglomerate unit (Hot Spring Sandstone Member) are present in the lower part of the formation. Cone-in-cone and calcareous silty concretions are present in shale. The formation is about 12,000 ft thick. Most of the unit is Late Mississippian (Chesterian) as indicated by the presence of conodonts and plant fossils. The formation is a deep-water marine turbidite sequence, derived primarily from a landmass (Llanoria) that existed along the southern margins of the Ouachita trough.
 - 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.
 - Sm Missouri Mountain Formation (Silurian)** - The Missouri Mountain consists of shale interbedded with conglomerate, novaculite, and sandstone. Few identifiable fossils have been recovered from this unit. The unit was deposited in a deep marine environment.
 - Sb Blaylock Formation (Silurian)** - The Blaylock consists of tan to gray, fine to medium sandstone interbedded with black fissile shale. Graptolite and trace fossils may be found, but are rare. The unit was deposited in a deep marine environment.

- ### Symbols
- Contact
 - Thrust Fault
 - Tear Fault
 - Strike and Dip
 - Overtaken Strike and Dip
 - Pit
 - Abandoned Pit
 - Reclaimed Pit

References

Haley, B. R., and Stone, C. G., 1971, Geologic Map of the Umpire Quadrangle, Arkansas: Arkansas Geological Commission, scale 1:62,500.

Howard, J. M., 2006, Arkansas Mineral Commodity Database, In-house data: Arkansas Geological Commission.

McFarland, J. D., 2004, Stratigraphic Summary of Arkansas: Arkansas Geological Commission Information Circular 36, 39p.

Miser, H. D., and Purdue, A. H., 1929 Geology of the De Queen and Caddo Gap Quadrangles, Arkansas: U.S. Geological Survey, Bulletin 808, 195p., scale 1:125,000.

DISCLAIMER

Although this map was compiled from digital data that was successfully processed on a computer system using ESRI ArcGIS 9.1 software at the Arkansas Geological Commission (AGC), no warranty, expressed or implied, is made by AGC regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. AGC does not guarantee this map or digital data to be free of errors or liability for interpretations from this map or digital data, or decisions based thereon.

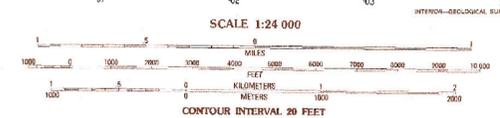
The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Arkansas Geological Commission.

PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY THE UNITED STATES GEOLOGICAL SURVEY
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN
FIELD CHECKED 1994 MAP EDITED 1996
PROJECTION LAMBERT CONFORMAL CONIC
GRID TRANSVERSE UNIVERSAL TRANSVERSE MERCATOR
3600-FOOT STATE GRID TICS ARKANSAS SOUTH ZONE
UTM GRID DECLINATION NATIONAL GEODETIC DATUM OF 1983
1983 MAGNETIC NORTH DECLINATION 390° EAST
VERTICAL DATUM NATIONAL GEODETIC VERTICAL DATUM OF 1983
HORIZONTAL DATUM 1983 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983,
move the projection lines as shown by dashed corner ticks
(7 meters south and 18 meters east)

There may be private inholdings within the boundaries of any
Federal and State reservations shown on this map
No distinction made between houses, barns, and other buildings

PROVISIONAL MAP
Produced from original
manuscript drawings. Information
shown as of date of
photography.



ROAD LEGEND

- Improved Road
- Unimproved Road
- Trail
- Interstate Route
- U.S. Route
- State Route

UMPIRE, ARKANSAS
PROVISIONAL EDITION 1986
34094-C1-T-024

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

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

