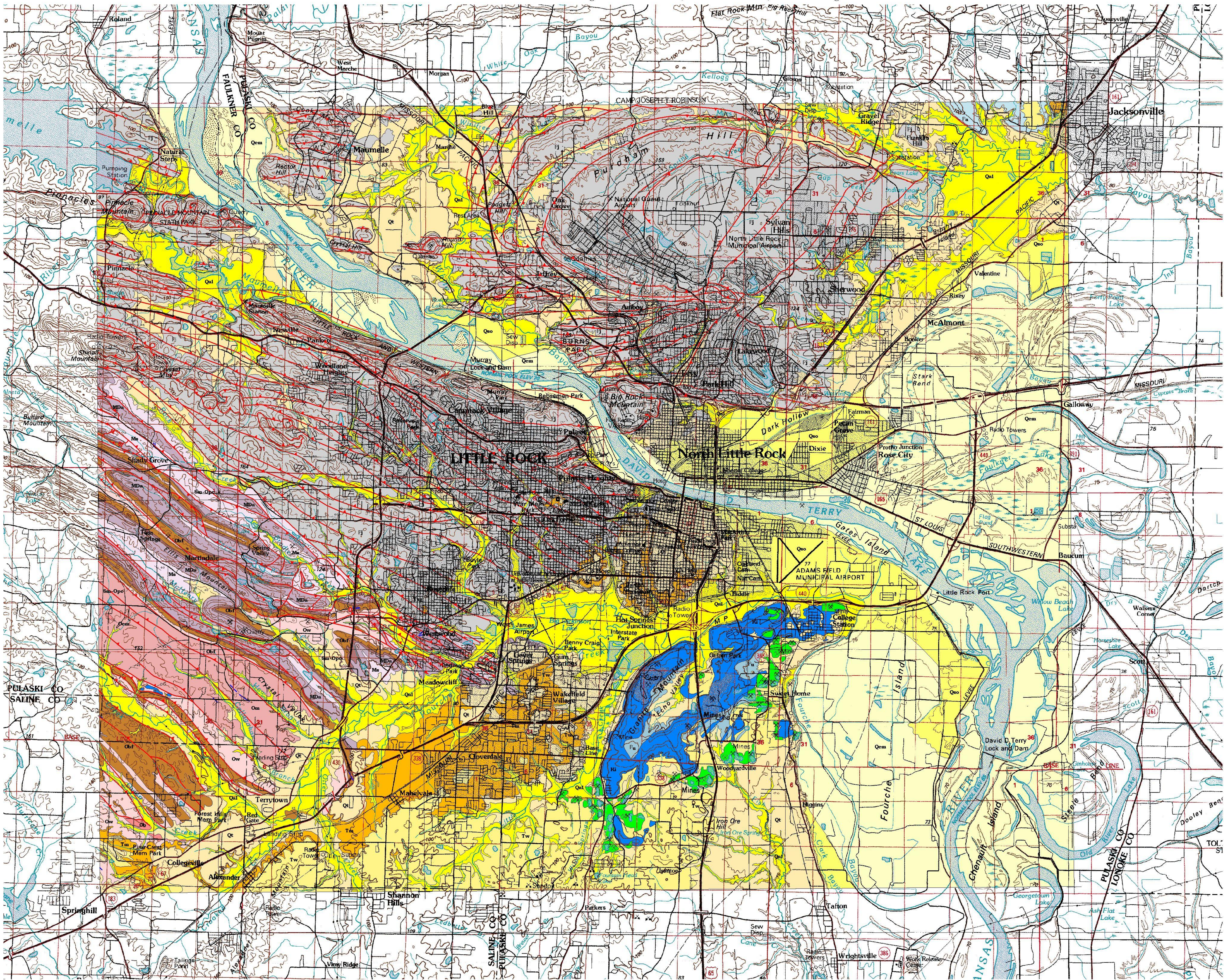
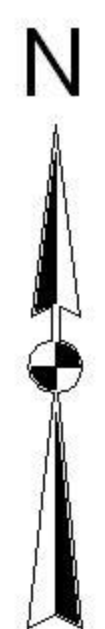


DIGITAL GEOLOGIC MAPS OF THE METROPOLITAN LITTLE ROCK, ARKANSAS AREA

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August 2003
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Scale 1:50,000
0 2 4 Miles



Abstract

Digital geologic quadrangle maps (1:24,000 scale) completed in the Little Rock, Arkansas area are McAlmont, North Little Rock, Pinnacle Mountain, Sweet Home, Little Rock, and Alexander. These six quadrangle were pulled onto a 1:100,000 scale base map and printed at 1:50,000 to demonstrate their usefulness and value to city and regional planners. From this type of map, planners, developers, and the public can make better decisions. Information one can gather from these maps are possible geohazards, mineral resources, water resources, possible construction problems, in addition to the surface geology, structure, and description of each formation. Inferences can be drawn from these maps about construction costs, availability of water resources, location of possible landfill sites and sewage treatment plants. City and regional planners may then develop plans for their respective communities with more comprehensive spatial data allowing best management practices.

Cultural expansion in an area is dependent upon many of the issues presented on these maps. As a society, we cannot afford to misuse our natural resources and under estimate geohazards. Consumption of our natural resources is ever increasing. In 2000, every person in the United States was responsible for the use of nearly 24 tons of industrial minerals per year.

Map Unit Description

- | | |
|----------------------|--------------------------|
| Quaternary | Cenozoic |
| Tertiary | Mesozoic |
| Cretaceous | Paleozoic |
| Pennsylvanian | Silurian Devonian |
| Mississippian | Ordovician |
| PreCambrian | |
- Qcm** Alluvial deposits from major streams, sometime source of sand and gravel.
 - Qso** Alluvial deposits from local streams, sometime source of sand and gravel.
 - Qal** Alluvial deposits from smaller streams and creeks, sometime source of sand and gravel.
 - Qtr** Alluvial terrace deposits from major streams, sometime source of sand and gravel.
 - Qt** Alluvial terrace deposits from local streams and creeks, sometime source of sand and gravel.
 - Tw** Wilcox Group - fluvial deposits of sand, clay, and gravel, sometime source of sand, clay, and gravel.
 - Tm** Midway Group - marine deposits of sandy calcareous clay and sandy fossiliferous limestone. Construction practices must account for the shrinking and swelling nature of this unit.
 - Kv** Basic to acidic igneous rocks, dominated by nepheline syenite, which is used as crushed stone and roofing granules.
 - Pu** Undifferentiated Paleozoic rocks.
 - Pa** Atoka Formation - shale, siltstone, and sandstone. Sandstone can be used for crushed stone applications, and the shale and siltstone for fill material. Water is primarily confined to quartz veins and fracture systems.
 - Pj** Jackfork Formation - shale, siltstone, dimension stone, building stone, and sandstone. Sandstone can be used for crushed stone applications, and the shale and siltstone for fill material. Water is primarily confined to quartz veins and fracture systems.
 - Ms** Stanley Formation - shale, siltstone, and sandstone. Sandstone can be used for crushed stone applications, and the shale and siltstone for fill material. Water is primarily confined to quartz veins and fracture systems.
 - MDa** Arkansas Novaculite - siliceous rock which is used as crushed stone, whetstones, and a source of tripoli. This unit is a good water producer due its' high degree of fracturing close to the surface.
 - Sm-Ope** Missouri Mountain - Polk Creek Formations - dark fissile shale with minor amounts of chert, novaculite, and conglomerate.
 - Obf** Bigfork Formation - thin - bedded chert, black siliceous shale, siltstone, and blue-gray limestone. This unit is utilized for crushed stone and for its' ability to produce large quantities of water.
 - Ow** Womble Formation - black shale with minor amounts of limestone, chert, and sandstone. Quartz veins and fracture systems are capable of producing water. Unit may contain erratic masses of igneous rocks.
 - Ob** Blakely Formation - black and green shale, gray sandstone, and blue-gray limestone. Sandstone and limestone may be used as crushed stone.
 - Om** Mazarr Formation - shale with minor amounts of sandstone, limestone, and chert. Quartz veins and fracture systems are capable of producing water.
 - Ocm** Crystal Mountain Formation - gray sandstone with minor amounts of shale, limestone, and siltstone. Quartz veins and fracture systems are capable of producing water.
 - Igm** Igneous erratic masses - metagabbro masses found to be 1.034 billion years old (Mullen and Stone, 1986).

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Symbols

- Contacts
- Strike and Dip
- Thrust Fault
- Mine - Quarry - Pit
- Igneous Dike
- Tear Fault

