

POTENTIOMETRIC SURFACE MAP OF THE BEDROCK AQUIFERS OF JOHNSON COUNTY, INDIANA

Johnson County, Indiana is located in the central portion of the state and is situated within two major drainage basins, the White and West Fork White River Basin to the west and the East Fork White River Basin to the east.

The potentiometric surface mapped (PSM) contour elevations represent lines of equal elevation relative to the measured groundwater levels in wells. In general, wells completed in a confined aquifer system are bound by impermeable layers and will have static water levels under hydrostatic pressure causing the water level to rise above the elevation of the aquifer resource. In contrast, an unconfined aquifer system is not bound by impermeable layers; therefore, the water level will not be under hydrostatic pressure and will not rise above the aquifer resource.

Static water level measurements in individual wells used to construct the potentiometric surface map are indicative of the water level at the time of well completion. Therefore, current site specific conditions may differ due to local or seasonal variations in measured static water levels.

Coordinate locations of water well records were physically obtained in the field, determined through address geocoding, or reported on water well records. Elevation data were obtained from a digital elevation model (DEM). Elevation and location quality control/assurance procedures were utilized to refine or remove data where errors were readily apparent.

Wells producing from bedrock deposits are limited with parts of the county lacking in data. This is primarily due to bedrock as a limited aquifer resource, and/or available overlying unconsolidated materials. Therefore, potentiometric surface elevation contours have not been extended throughout most of the county.

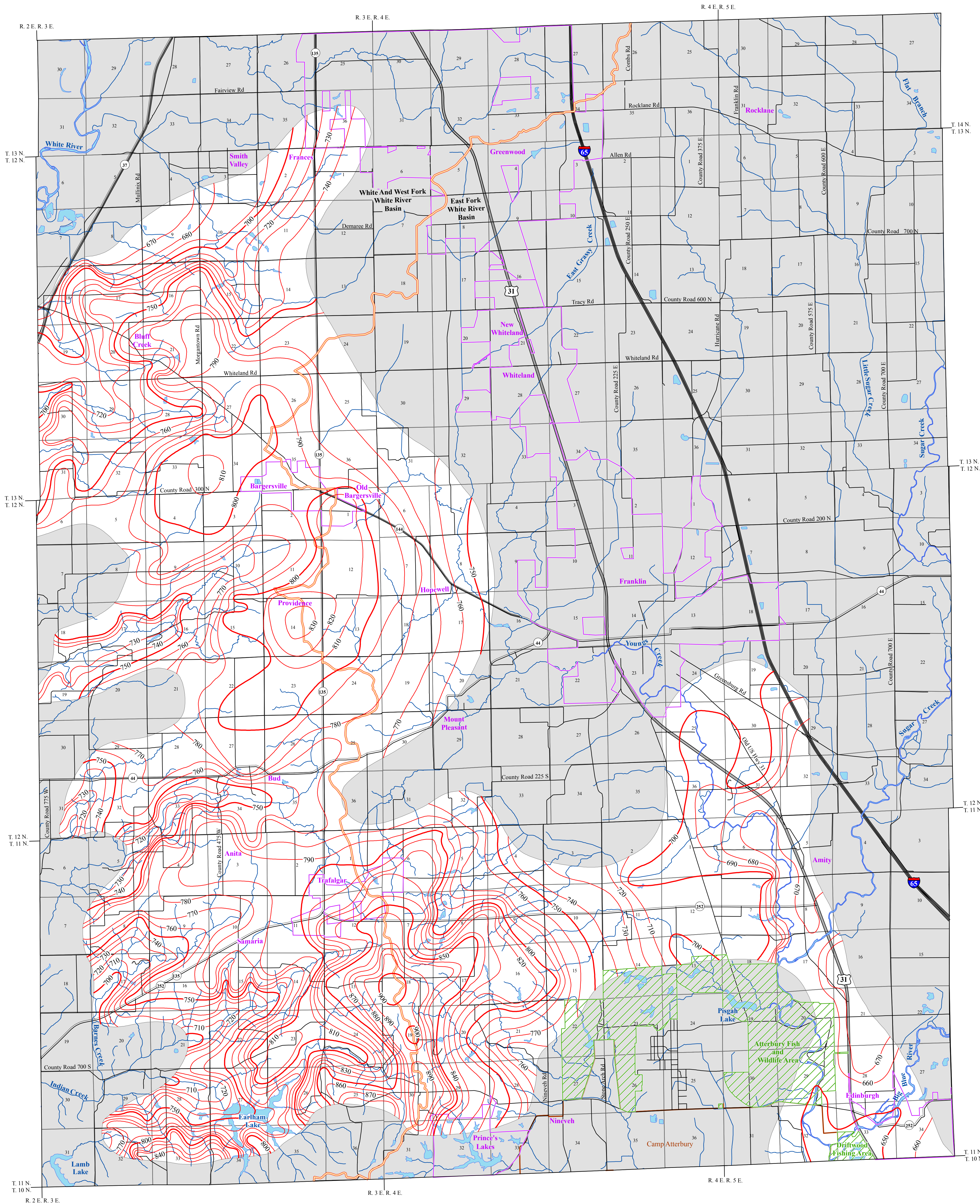
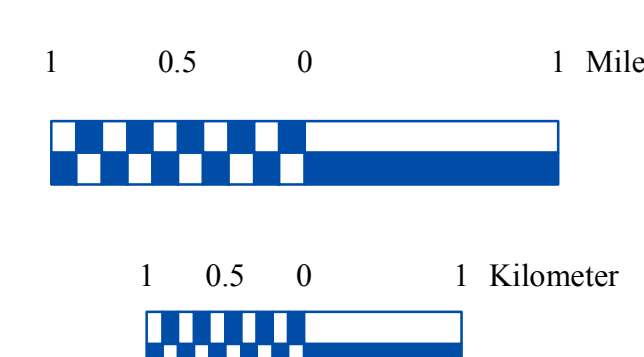
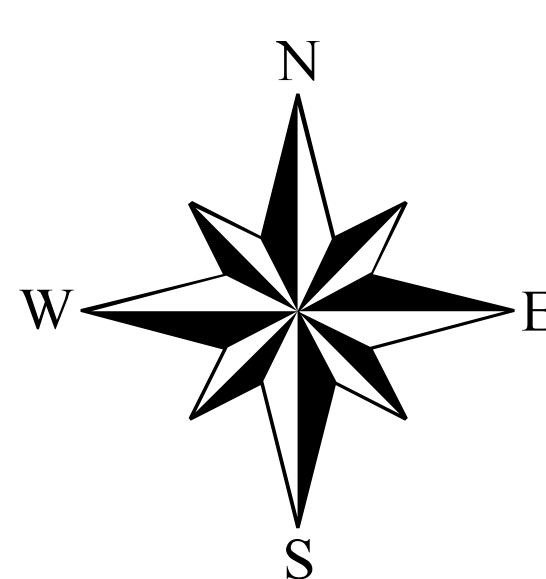
In Johnson County depth to bedrock varies ranging from less than 5 feet in the southwest up to 250 feet to the northeast. There are 487 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Wells are generally completed in shale and silstone bedrock deposits of the Mississippian Harder Group or the Devonian and Mississippian New Albany Shale. However, much of the eastern part of Johnson County is lacking in data and/or covered by more prolific unconsolidated deposits that limit the necessity to complete wells in bedrock. Therefore, potentiometric surface elevations contours have not been extended through these areas.

Potentiometric surface elevations range from a high of 900 feet mean sea level (msl) in the south-central region of the county near the basin divide, to a low of 650 feet msl in the southeast part of the county along the Big Blue River.

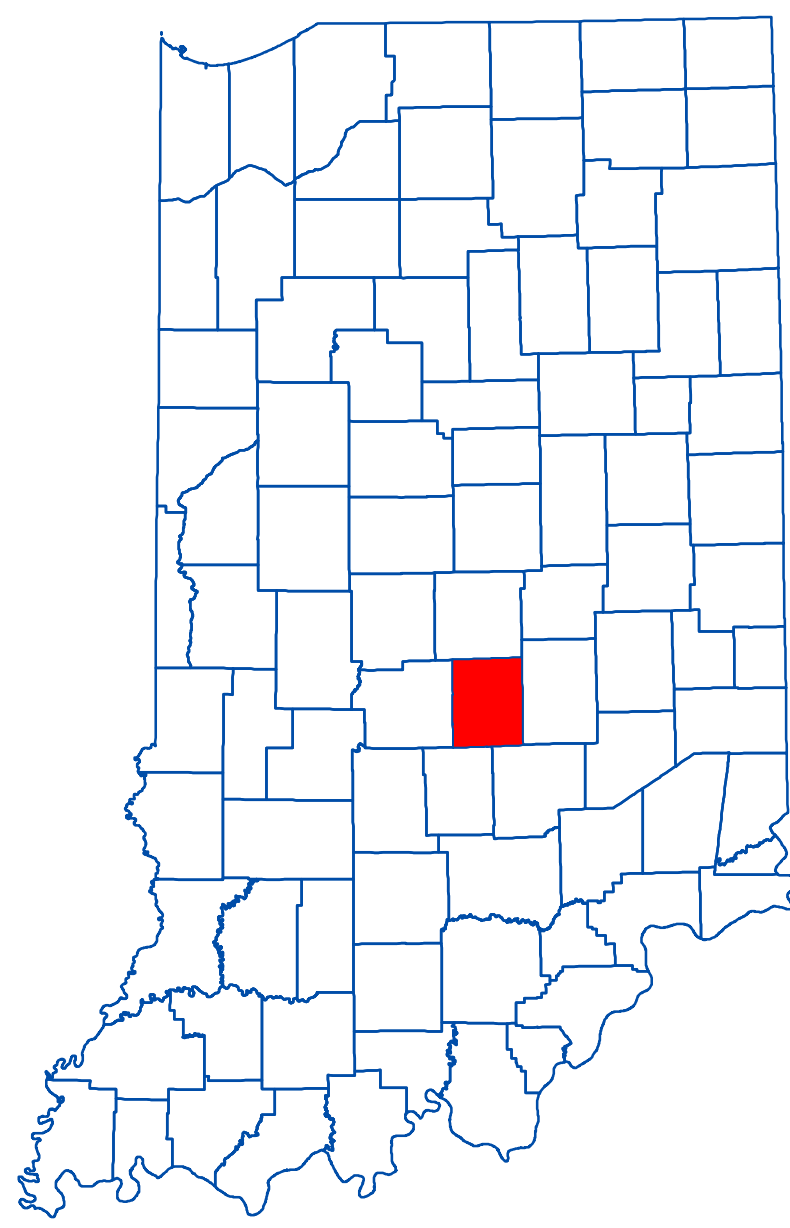
Generalized groundwater flow directions for Johnson County is towards major drainage relevant to the basin. Therefore, in the White and West Fork White River Basin, groundwater flow is west towards the White River, and to the east-southeast towards Sugar Creek and the Big Blue River for the East Fork White River Basin.

EXPLANATION

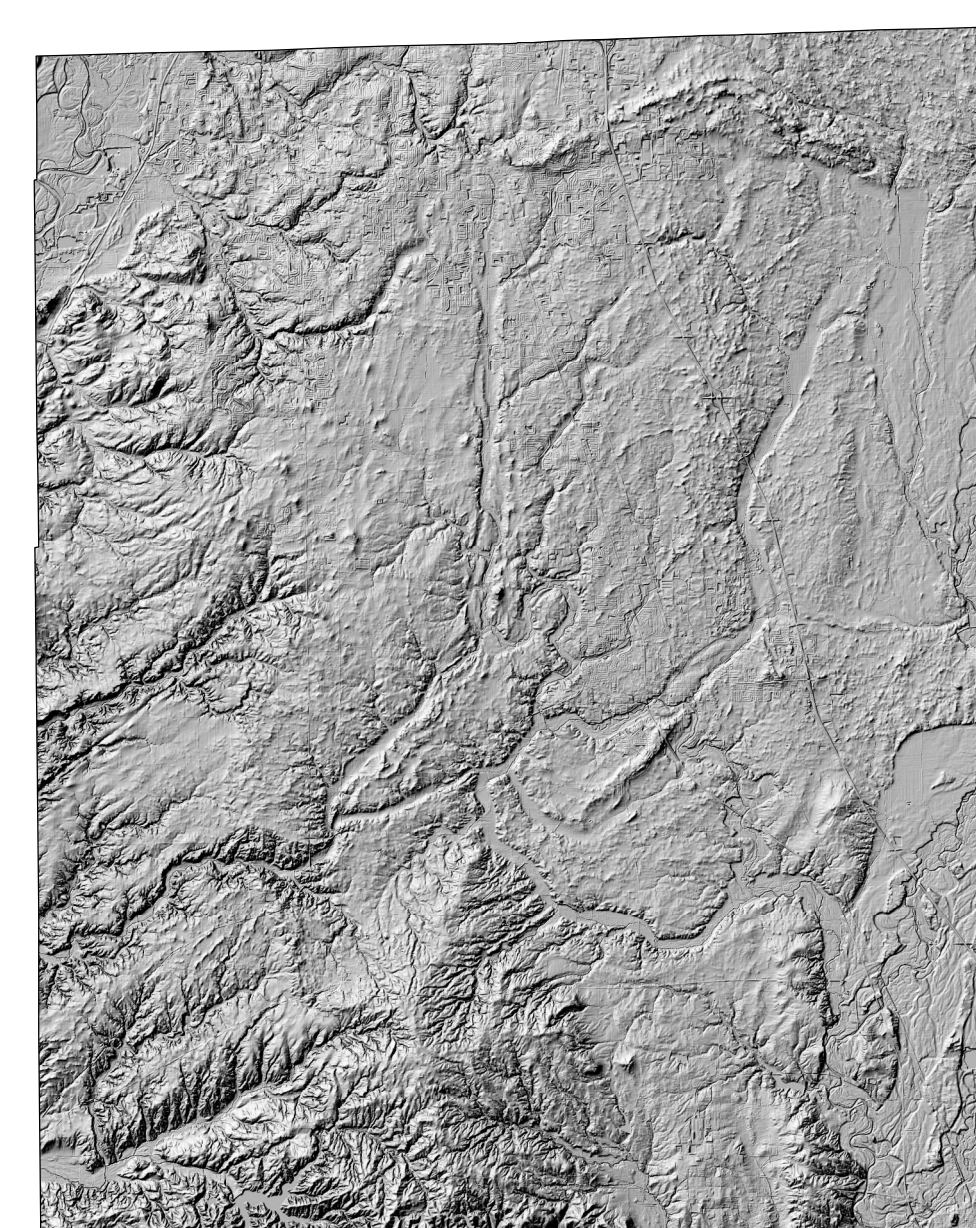
- 700 Line of equal elevation, in feet above mean sea level
- Potentiometric Contour interval 10 feet
- Stream
- County Road
- State Road
- US Highway
- Interstate
- Basin Boundary
- Municipal Boundary
- Camp Atterbury Military Reservation
- State Managed Property
- Lake & River
- No Aquifer Material or Limited Data



Location Map



Hillshade Map of Johnson County, Indiana



Map Use and Disclaimer Statement

We request that the following agency be acknowledged in products derived from this map: Indiana Department of Natural Resources, Division of Water.

This map was compiled by staff of the Indiana Department of Natural Resources, Division of Water using data believed to be reasonably accurate. However, a degree of error is inherent in all maps. This product is distributed "as is" without warranties of any kind, either expressed or implied. This map is intended for use only at the published scale.

This map is created from several existing shapefiles. Township and Range Lines of Indiana (line shapefile, 20020621), Land Survey Lines of Indiana (polygon shapefile, 20020621), and County Boundaries of Indiana (polygon shapefile, 20020621) are all from the Indiana Geological Survey and based on a 1:24,000 scale. Roads (TIGER and INDOT) (line shapefile, 2005) is from the Indiana Department of Transportation and based on a 1:100,000 scale. System (line shapefile, 2003) is from the Indiana Department of Transportation and based on a 1:24,000 scale. Incorporated Boundaries in Indiana (polygon shapefile, 20060501) is from the Graphics and Engineering Section, Indiana Department of Transportation. Hydrography, Streams (NHDI) (line shapefile, 20081218), Rivers (NHDI) (polygon shapefile, 20081218), and Lakes (NHDI) (polygon shapefile, 20081218) are from the U.S. Geological Survey and based on a 1:24,000 scale. Basin boundaries are modified from Watershed Boundary Dataset (polygon shapefile, 2008) from the Natural Resource Conservation Service and based on a 1:24,000 scale. Managed Lands IDNR IN (polygon shapefile, 20100920) is from the Indiana Department of Natural Resources and based on a 1:24,000 scale. The Hillshade image is derived from the Indiana OrthoLiDAR Statewide Collection Program (2013). Johnson County Bedrock, No-Aquifer Material or Limited Data (polygon shapefile, Maier, 2012, Revised 2016) and Potentiometric Surface Contours of the Bedrock Aquifers of Johnson County, Indiana (line shapefile, Maier, 2012, Revised 2016) are based on a 1:24,000 scale.

Potentiometric Surface Map of the Bedrock Aquifers of Johnson County, Indiana

by
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