

# POTENTIOMETRIC SURFACE MAP OF THE BEDROCK AQUIFERS OF SPENCER COUNTY, INDIANA

Spencer County, Indiana is located in the southwest part of the state and is within the Ohio River Basin throughout most of the county excluding a small part of the north-central area which is within the Patoka River Basin.

The mapped potentiometric surface contours 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. Elevation and location quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

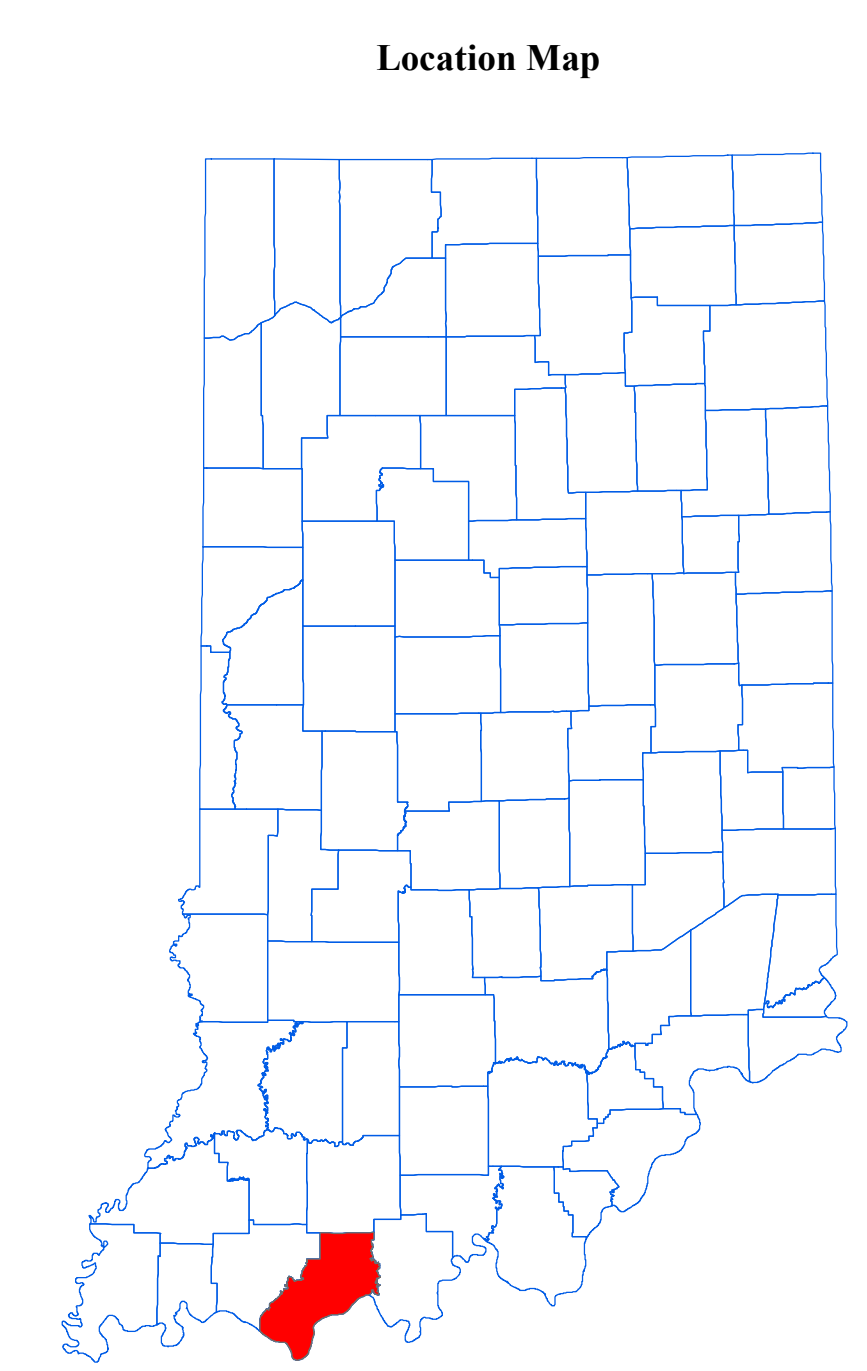
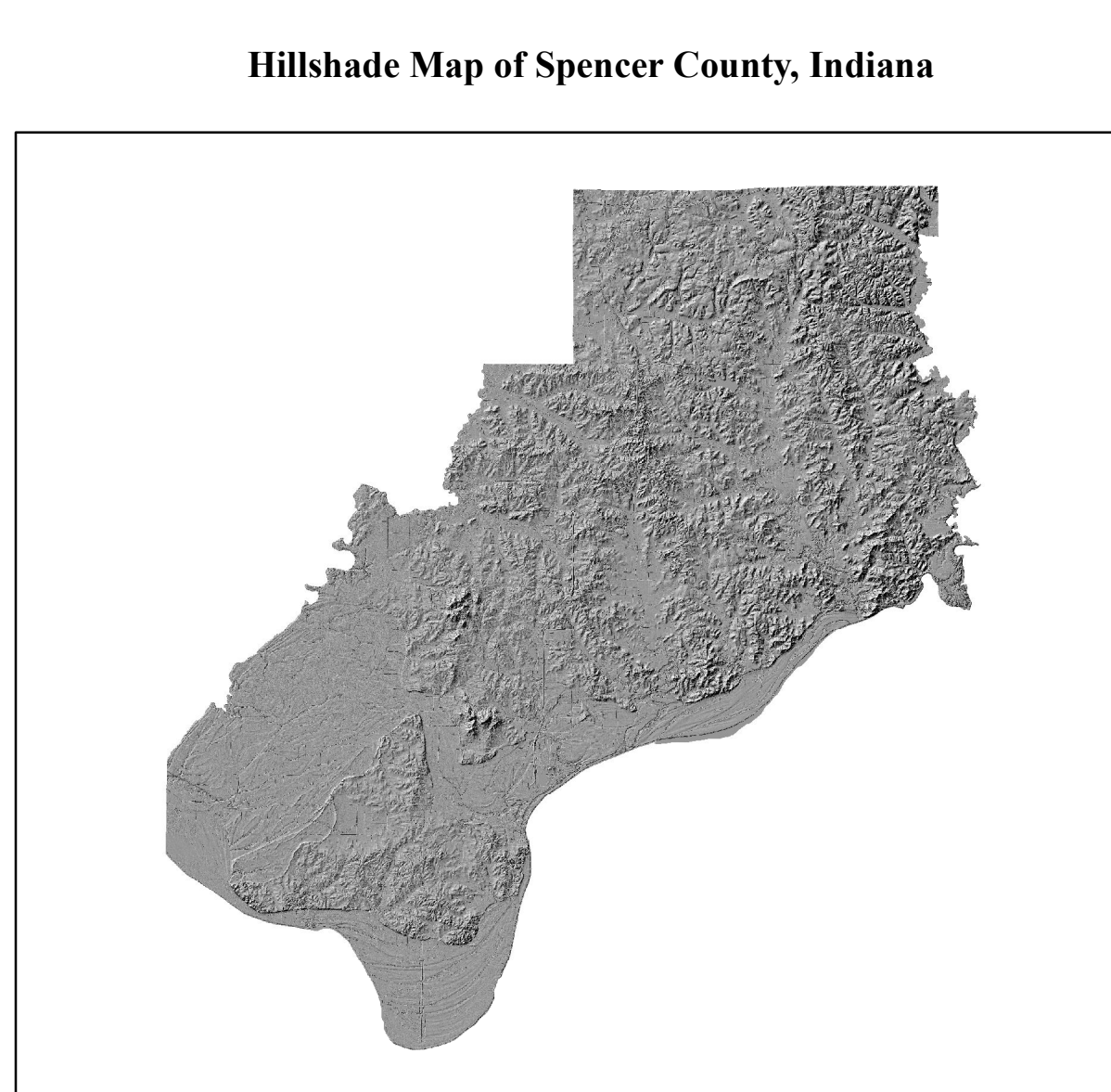
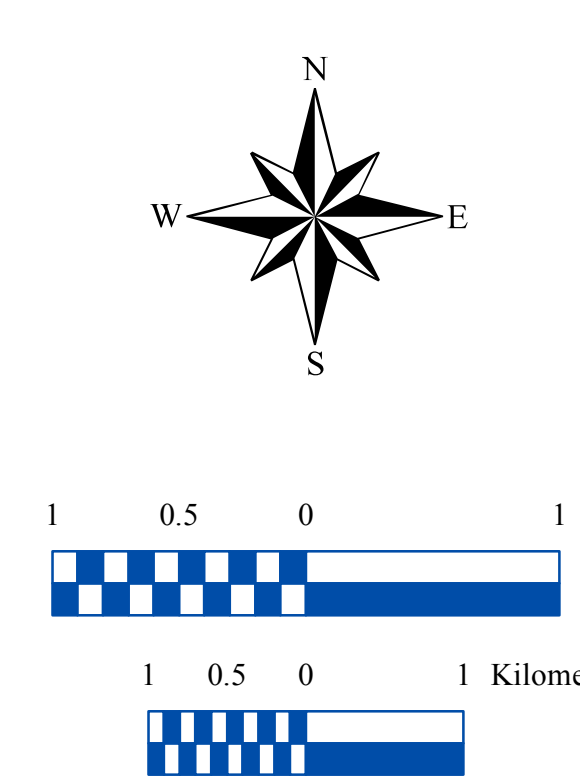
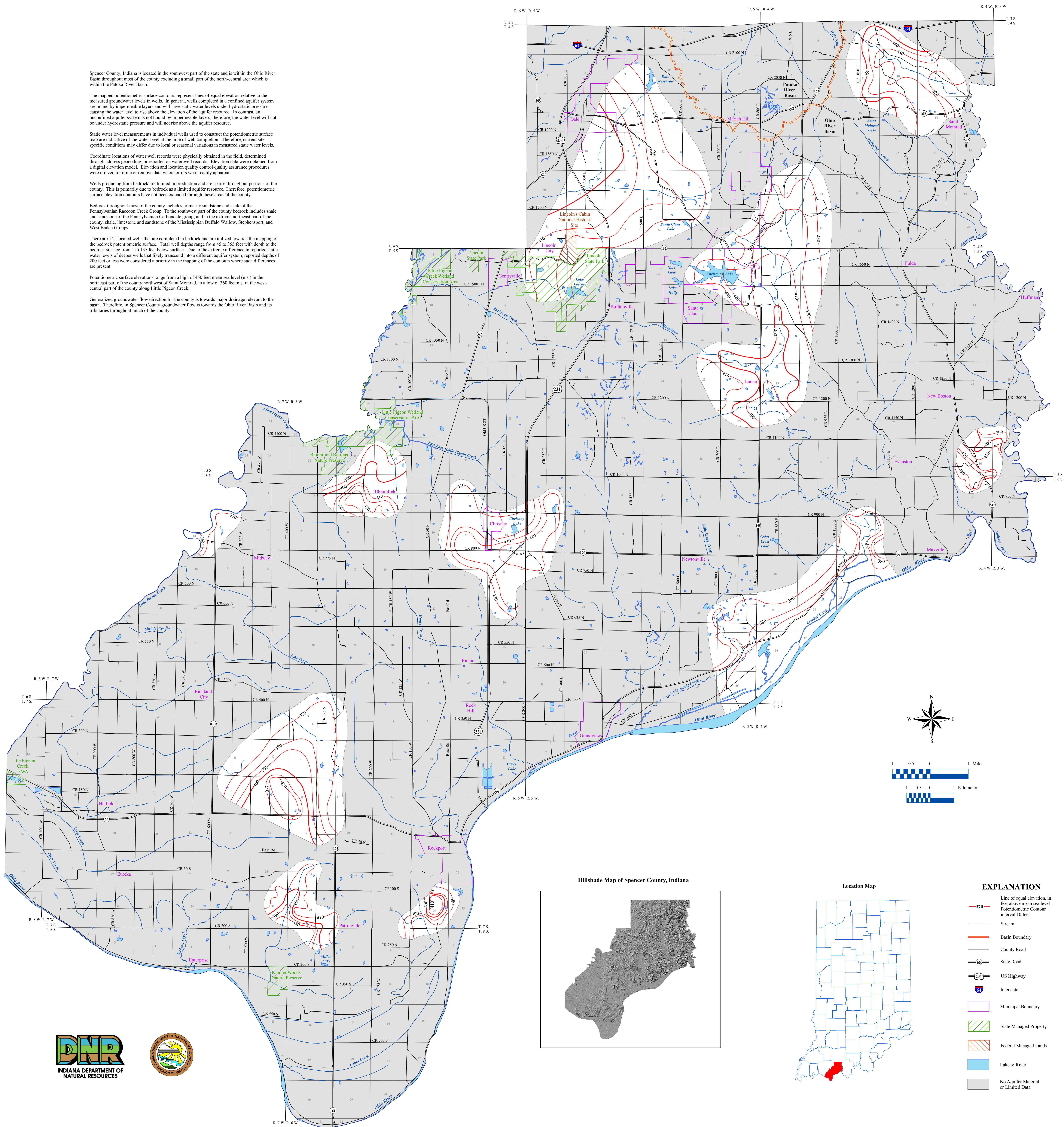
Wells producing from bedrock are limited in production and are sparse throughout portions of the county. This is primarily due to bedrock as a limited aquifer resource. Therefore, potentiometric surface elevation contours have not been extended through these areas of the county.

Bedrock throughout most of the county includes primarily sandstone and shale of the Pennsylvanian Racoon Creek Group. To the southwest part of the county bedrock includes shale and sandstone of the Pennsylvanian Carbonate group, and in the extreme northeast part of the county, shale, limestone and sandstone of the Mississippian Buffalo Wallow, Stephensport, and West Baden Groups.

There are 141 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Total well depths range from 45 to 355 feet with depth to the bedrock surface from 1 to 135 feet below surface. Due to the extreme difference in reported static water levels of deeper wells that likely transcend into a different aquifer system, reported depths of 200 feet or less were considered a priority in the mapping of the contours where such differences are present.

Potentiometric surface elevations range from a high of 450 feet mean sea level (msl) in the northeast part of the county northwest of Saint Meinrad, to a low of 360 feet msl in the west-central part of the county along Little Pigeon Creek.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, in Spencer County groundwater flow is towards the Ohio River Basin and its tributaries throughout most of the county.



**EXPLANATION**

- 370 Line of equal elevation, in feet above mean sea level
- Potentiometric contour interval 10 feet
- Stream
- Basin Boundary
- County Road
- State Road
- US Highway
- Interstate
- Municipal Boundary
- State Managed Property
- Federal Managed Lands
- Lake & River
- No Aquifer Material or Limited Data



**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. System1 (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 (NHID) (line shapefile, 20081218), Rivers (NHID) (polygon shapefile, 20081218), and Lakes (NHID) (polygon shapefile, 20081218) are from the U.S. Geological Survey and based on a 1:24,000 scale. Managed Lands (DNR TN) (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 Ortho-LIDAR Statewide Collection Program (2013). Spencer County Bedrock No Aquifer Material or Limited Data (polygon shapefile, Maier, 2018) and Potentiometric Surface Contours of the Bedrock Aquifers of Spencer County, Indiana (line shapefile, Maier, 2018) are based on a 1:24,000 scale.

**Potentiometric Surface Map of the Bedrock Aquifers of Spencer County, Indiana**

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October 2018

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