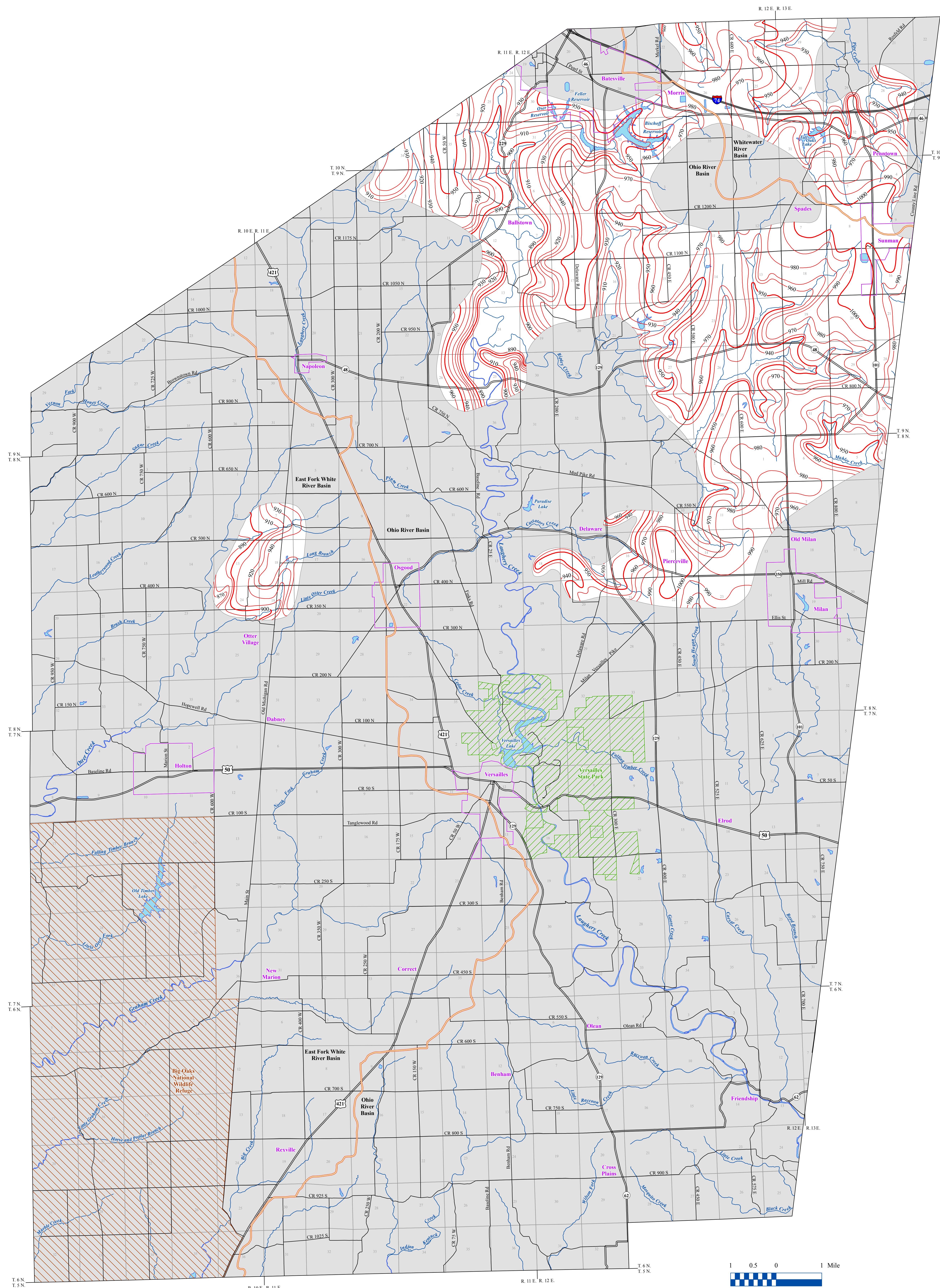


POTENTIOMETRIC SURFACE MAP OF THE UNCONSOLIDATED AQUIFERS OF RIPLEY COUNTY, INDIANA



Ripley County is located in the southeastern portion of Indiana, and is bounded by the counties of Jennings, Decatur, Franklin, Dearborn, Ohio, Switzerland, and Jefferson to the west, northwest, northeast, east, southeast, and south, respectively. The western portion of the county lies within the East Fork White River Basin, the eastern portion in the Ohio River Basin, and the northeast corner in the Whitewater River Basin.

The potentiometric surface is a measure of the pressure on groundwater in a water bearing formation. Wells are completed in aquifers at various depths, and typically, under confined conditions (bounded by impermeable layers above and below the water bearing formation). However, some wells are completed under unconfined (not bounded by impermeable layers) settings. Water in a confined aquifer, which is under hydrostatic pressure, will rise in a well above the top of the water bearing formation. In contrast, groundwater in an unconfined aquifer, which is at atmospheric pressure, will not rise in a well above the top of the water bearing formation.

The Potentiometric Surface Map (PSM) of the unconsolidated aquifers of Ripley County was mapped by contouring the elevations of 263 static water-levels reported on well records received primarily over a 30 year period. Universal Transverse Mercator (UTM) coordinates for the water wells were either physically obtained in the field, determined through address geocoding, or reported on water well records. The location of the majority of the water well records used to make the PSM were field verified. Elevation data were obtained from a digital elevation model. Quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

Static water-level measurements in individual wells used to construct county PSM's are indicative of the water-level at the time of well completion. The groundwater level within an aquifer constantly fluctuates in response to rainfall, evapotranspiration, groundwater movement and pumping. Therefore, measured static water-levels in an area may differ due to local or seasonal variations. Because fluctuations in groundwater are typically small, static water-levels can be used to construct a generalized PSM. As a general rule, but certainly not always, groundwater flow approximates the overlying topography and intersects the land surface at major streams.

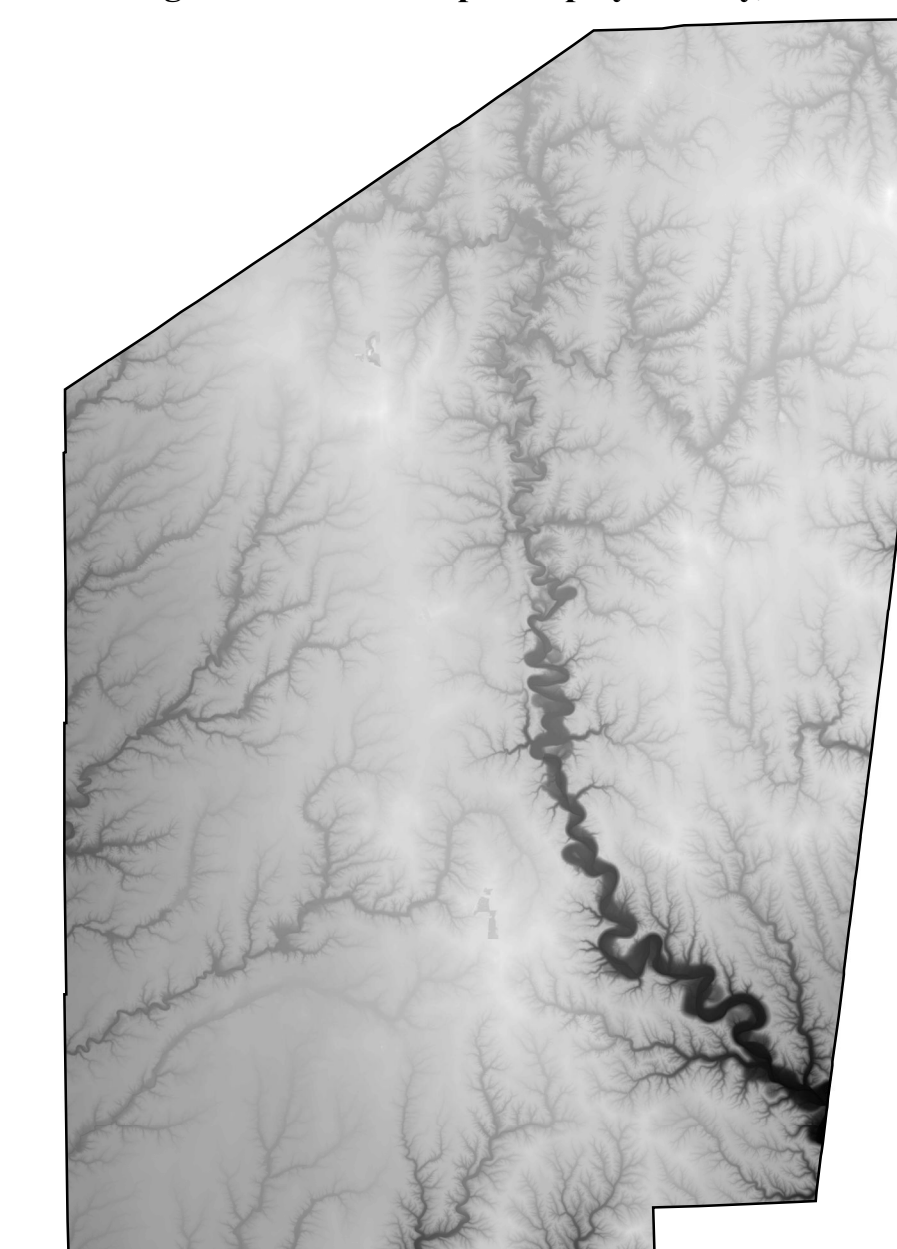
Potentiometric surface elevations range from a high of 1000 feet mean sea level (msl) in the northeastern portion of the county near Sumner, to a low of 870 feet msl in the west-central portion of the county. Regional groundwater flow direction is generally to the south towards Laughery Creek or northeast towards the Whitewater River. Localized groundwater flow in the northeast is towards Ripley Creek a tributary of Laughery Creek, and Pipe Creek, a tributary of the Whitewater River. There is a small area in the western portion of the county where flow direction is to the west toward Otter Creek, a tributary of the East Fork White River.

The county PSM can be used to define the regional groundwater flow path and to identify significant areas of groundwater recharge and discharge. County PSM's represent overall regional characteristics and are not intended to be a substitute for site-specific studies.

EXPLANATION

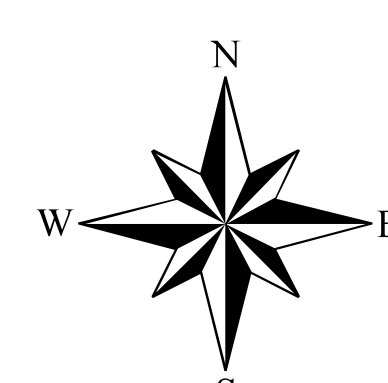
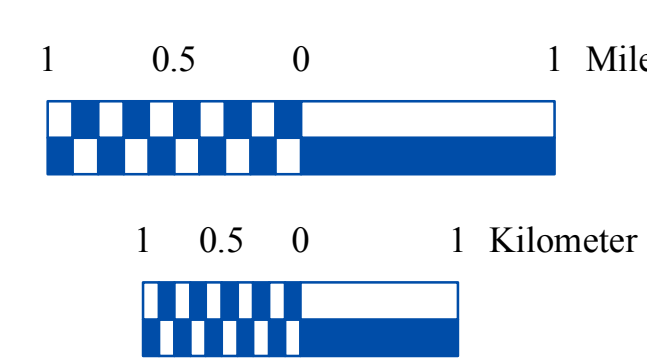
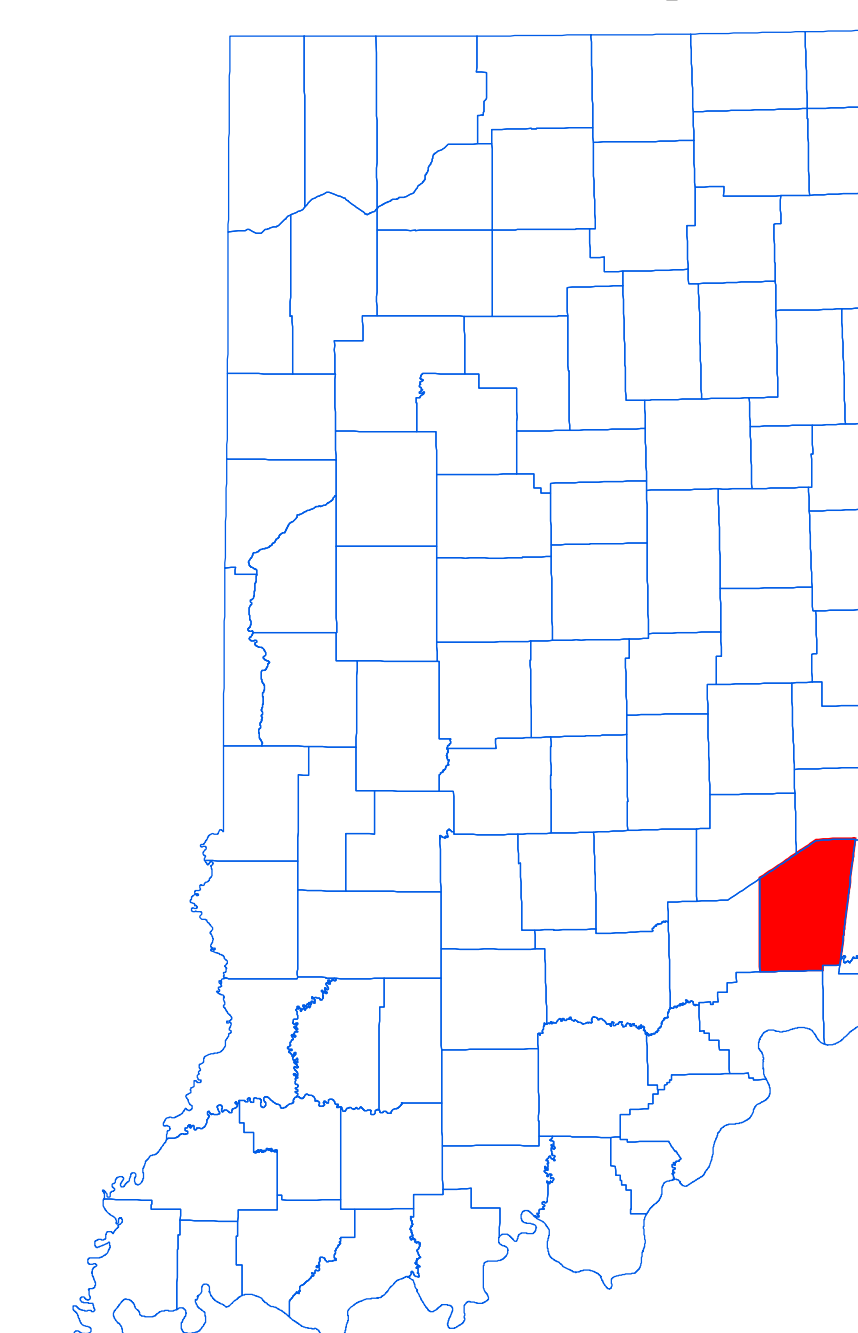
- Line of equal elevation, in feet above mean sea level
Potentiometric Contour interval 10 feet
- Stream
- Basin Boundary
- County Road
- State Road
- US Highway
- US Interstate
- Municipal Boundary
- State Managed Property
- Federally Managed Lands
- Lake & River
- No Aquifer Material or Limited Data

Digital Elevation Map of Ripley County, Indiana



Elevation (feet)
1064
586

Location Map



Map Use and Disclaimer Statement

Map prepared by Kristiana E. Cox,
DNR, Division of Water, Resource Assessment Section

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 1:24,000 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 (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. Basin boundaries are modified from the Watershed Boundary Dataset (polygon shapefile, 2008) developed by the National Conservation Service and based on a 1:24,000 scale. Managed Lands IN (polygon shapefile, 20100920) is from the Indiana Department of Natural Resources and based on a 1:24,000 scale. The Digital Elevation Map image is derived from the Indiana OrthoLIDAR Statewide Collection Program (2013). Ripley County Unconsolidated No Aquifer Material or Limited Data (polygon shapefile, Cox, 2018) and Potentiometric Surface Contours of the Unconsolidated Aquifers of Ripley County, Indiana (line shapefile, Cox, 2018) are based on a 1:24,000 scale.

Potentiometric Surface Map of the Unconsolidated Aquifers of Ripley County, Indiana

by
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