

# **Potentiometric Surface Map of the Bedrock Aquifers of Washington County, Indiana**

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Washington County, Indiana is located in the southern part of the state and is within the East Fork White River Basin in the northern third of the county and within the Ohio River Basin in the southern part of the county.

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 throughout areas of the county.

Bedrock throughout the county includes shale, limestone and sandstone of the Mississippian Buffalo Wallow, Stephensport, and West Baden Groups; limestone and sandstone of the Mississippian Blue River and Sanders Group; and siltstone and shale of the Mississippian Borden Group.

There are 422 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Total well depths range from 22 to 353 feet with depth to the bedrock surface from 2 to 117 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 860 feet mean sea level (msl) along a ridgetop in the west-central area of the county, to a low of 600 feet msl to the southwest along the Blue River.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, in Washington County groundwater flow is towards tributaries of the East Fork White River Basin in the north and tributaries of the Ohio River Basin in the south.