

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

By
Randal D. Maier
Division of Water, Resource Assessment Section
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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.

Nearly all of Spencer County is extremely limited in unconsolidated aquifer potential. Therefore, potentiometric contours have not been extended throughout much of the county. However, two areas in the southeast and southwest parts of the county along outwash of the Ohio River and Little Pigeon Creek provide enough well data with sufficient capacities to allow contours to be mapped.

Well depths 100 feet or less were a priority in mapping the potentiometric surface in Spencer County. However, deeper wells were used to compliment the mapping in areas where wells at depths of less than 100 feet were sparse. There are 60 unconsolidated located water well records in the county utilized towards the mapping of the unconsolidated potentiometric surface.

Potentiometric surface elevations range from a high of 380 feet mean sea level (msl) in the central southeast and central southwest portions of Spencer County, to a low of 360 feet msl in the southeast along the Ohio River and the southwest along Little Pigeon Creek.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, throughout the mapped portion of Spencer County groundwater flow is towards Little Pigeon Creek in the southwest and the Ohio River in the southeast.