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

By
Randal D. Maier
Division of Water, Resource Assessment Section
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Henry County, Indiana is located in the east-central portion of the state and is within the boundaries of three river basins. The northern area of the county is within the White and West Fork White River Basin; to the east is the Whitewater River Basin; and the remainder and largest part of the county, the East Fork White River Basin.

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. The potentiometric contour lines crossing through Westwood Park Reservoir represent the potentiometric surface of the groundwater in the immediate area, not the water level of the reservoir, which is a man made feature.

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/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

In Henry County wells producing from bedrock are extremely limited with much of the county lacking in data and/or covered by more prolific unconsolidated deposits that limit the necessity to complete wells in bedrock. Therefore, potentiometric surface elevation contours have not been extended through the majority of the county. Depth to bedrock generally ranges from 10 to 345 feet with wells completed in carbonate deposits of the Silurian and Devonian Carbonates Aquifer System or, to a much lesser extent, shale with interbedded limestone of the Ordovocian Maquoketa Group. There are 169 located wells that are completed in bedrock and utilized towards the mapping of the bedrock potentiometric surface.

Potentiometric surface elevations range from an isolated high of 1020 feet mean sea level (msl) along the north-central part county, to a low of 880 feet msl in the southwest part of the county along a portion of the Big Blue River. Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. However, due to extremely limited data, potentiometric surface contours are limited to isolated sections along the Big Blue River in the East Fork White River Basin; and, along Buck Creek and Fall Creek in the White and West Fork White River Basin.