

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

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Jackson County, Indiana is located in the south-central part of the state and is entirely within the East Fork White 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 with parts of the county lacking in data. This is primarily due to bedrock as a limited aquifer resource, and/or available overlying unconsolidated materials. Therefore, potentiometric surface elevation contours have not been extended throughout areas of the county.

Bedrock throughout the county includes limestone of the Blue River and Sanders Group along the western edge of the county; siltstone and shale with some fine-grained sandstone of the Mississippian Borden Group throughout much of the central part of the county; the New Albany Shale along the eastern third of the county; and limestone and dolomite of the Silurian and Devonian Carbonates in the northeast part of the county. However, in some cases, deeper wells located in the outcrop area of the New Albany Shale bypass the shale deposits in favor of the underlying carbonates.

There are 148 located wells that are completed in bedrock and are utilized towards the mapping of the bedrock potentiometric surface. Total well depths range from 23 to 224 feet with depth to

the bedrock surface from 5 to 130 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 150 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 850 feet mean sea level (msl) near Norman Station in the west-central edge of the county, to a low of 520 feet msl near Sparksville in the southwest corner of the county.

Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. In much of Jackson county drainage is off the upland ridge areas towards the East Fork White River as well as tributaries associated with the East Fork White River. These include South Fork Salt Creek to the northwest and Vernon Fork Muscatatuck River along the east-central edge.