

# **Potentiometric Surface Map of the Unconsolidated Aquifers of St. Joseph County, Indiana**

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St. Joseph County, Indiana is located in the north-central portion of the state and is situated within three major drainage basins. Much of the county is split between two basins; the northeast region is part of the St. Joseph River Basin, and the western and southern areas are within the Kankakee River Basin. A small portion of the northwest corner is within the Lake Michigan Region.

The generalized unconsolidated potentiometric surface map contour elevations represent lines of equal elevation to which groundwater levels will rise in wells. 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 either obtained from topographic maps or 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 St. Joseph County well depths 100 feet or less were a priority in mapping the potentiometric surface. However, deeper wells were used in areas where data was sparse. There are approximately 23,875 water well records in the county of which, 7058 (30%) are located. Approximately 4,777 (20% of the total) are within the priority depth range of 100 feet or less. Potentiometric surface elevations range from a high of 830 feet mean sea level (msl) in the central southeast region of the county, to a low of 670 feet msl along the St. Joseph River in the north-central part of the county. Generalized groundwater flow direction for most of St. Joseph County is towards major drainage relevant to the basin. Therefore, in the St. Joseph River Basin, groundwater flow is towards the St. Joseph River, and in the Kankakee River Basin groundwater flow is towards the Kankakee River. Regionally, however, groundwater flow is to the north for the St. Joseph River Basin and southwest for the Kankakee River Basin. For the Lake Michigan Region, however, general groundwater flow reflects a more local trend towards the north-northeast, but regionally would likely reflect a more north-northwest trend.

Much of the north and west part of St. Joseph County include outwash plain and valley train sediments at the surface. Therefore, most of the potentiometric surface for this part of the county is generally under unconfined or semi-confined conditions. However, portions of southeast St. Joseph County include ground and end moraine sediments at the surface. Therefore, the potentiometric surface to the southeast is more commonly considered under confined conditions.