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

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Cass County, Indiana is located in the north-central portion of the state with all of the areal extent of the county situated within the Upper Wabash 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. 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 Cass County well depths 100 feet or less were a priority in mapping the potentiometric surface. However, deeper wells were used to compliment the mapping in areas where wells at depths of less than 100 feet were sparse. There are 821 unconsolidated located water well records in the county with approximately 494 that are within the priority depth range. Portions of the county are lacking in data and/or are covered by deposits that have limited to non-existent aquifer potential. Therefore, potentiometric surface elevations contours have not been extended through these areas.

Potentiometric surface elevations range from a high of 790 feet mean sea level (msl) along the south-central area near the county line and the extreme northeast corner of the county, to a low of 620 feet msl in the central part of the county along a portion of the Eel River. Generalized groundwater flow direction for Cass County is towards major drainage relevant to the basin. Therefore, groundwater flow is towards the Wabash River and associated tributaries for much of the county. To the northwest, however, groundwater flow is west out of the county towards the Tippecanoe River.