The occurrence of bedrock aquifers higher on the regional aquifer system.

Integrating the characteristics of the bedrock geology provides a better understanding of the potential for groundwater occurrence. The hydraulic properties of the bedrock geology are also influenced by post-depositional processes, which promote jointing, fracturing, and karst development in the underlying aquifers. These processes can significantly affect the recharge and discharge of the bedrock aquifers, making it difficult to track and manage groundwater flow.

The susceptibility of bedrock aquifer systems to surface contamination is also a concern. The Borden Group and New Albany Shale are considered to have extremely low potential as aquifer systems, and combined they cover about 7 percent of Scott County. Limestone of the Muscatatuck Group is exposed in a few stream valleys and adjacent lowlands in the northern part of the county. This aquifer system typically has 10 to 25 feet of fine-grained deposits, but while it is considered very susceptible to surface contamination, it is not a significant source of groundwater in Scott County.

The Devonian Carbonates Aquifer System is the most productive bedrock aquifer system in Scott County. This aquifer system covers about 13 percent of the county and is composed primarily of limestone and dolomite. It typically has a thickness of 50 to 100 feet, and when drilled into the underlying Devonian limestones, most wells greater than 25 feet in depth produce sufficient water for domestic purposes by relying on extra well-screening and pumping. Although a few wells produce water from the New Albany Shale, the Mississippian -- Borden Group Aquifer System has reported testing rates of less than 5 gallons per minute (gpm), and it is generally not very productive. The Borden Group Aquifer System is composed mostly of siltstone and shale, but the Borden Group is exposed in thin areas. In the outcrop/subcrop area of the Silurian and Devonian carbonate rocks underlying the New Albany Shale, the Borden Group Aquifer System has reported testing rates of less than 5 gallons per minute (gpm), and it is generally not very productive.