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## ***A GEOPHYSICAL INVESTIGATION INTO THE LITHOLOGY AND STRATIGRAPHY OF THE MAHOMET BURIED VALLEY, PIATT COUNTY, IL***

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P-wave profiles, S-H wave profiles, vertical seismic profiles (VSP), gamma logs, well logs, and borehole cores were compiled to produce a complete stratigraphic section of the Mahomet aquifer system in Piatt County, IL. The Illinois Board of Higher Education supported this collaborative project between scientists from Illinois State Geologic Survey (ISGS) and faculty and students Illinois State University (ISU). Preliminary results from a series of shear wave and P-wave seismic profiles, borehole cores, and well log data support the results of earlier investigations of the Quaternary glacial stratigraphy of the area. Wisconsinan and Illinoian tills overlie pre-or early-Illinoian sands and gravels. The sands and gravels, present within the paleovalley and its major tributaries, compose the Mahomet aquifer and are part of the Mahomet Member, Banner Formation. The Mahomet Member directly overlies Pennsylvanian strata shale or limestone. The Wedron Group is the uppermost unit formation in the area and consists of diamictons interbedded with minor sand and gravel layers. The Wedron is approximately ranges from 20-30 meters in thickness and extends laterally over the entire area except for portions of the Sangamon River floodplain. The diamicton varies in color from brown to gray and may include dark organic layers near its base. A dark brown to black clay (Robein or Roxana Loess) layer underlain by green clay (Sangamon Soil Horizon) and distinguishes the Wisconsinan from the underlying Illinoian strata. The green clay and the loess are present in some areas. This is likely due to erosion by Sangamonian rivers and creeks or by a Wisconsinan glacier overriding the land surface. The Illinoian strata, which are approximately ranges from 18-33 meters in thickness, consists of gray diamictons interbedded with gravel, sand, and silt layers. Organic matter including wood and shells. The Pre- or Early-Illinoian Mahomet Sand Member, (0-50 meters thick), consists of fine to coarse-grained lithic sand interbedded with pebbles and gravel. The sand, pebbles, and gravel are all sub-rounded to rounded and vary from poorly sorted to well sorted. The Mahomet Sand Member is thickest in the center of the channel and thins along its margins into the tributaries. Structure contour maps on the top to the Glasford Formation shows a valley-like feature with as much as 17 meters of relief.

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