

THICKNESS, ELEVATION OF THE BASE, AND TRANSMISSIVITY GRIDS OF THE UNCONFINED AQUIFER, SUSSEX COUNTY, DELAWARE

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SUMMARY

This digital product contains gridded estimates of the thickness (b), elevation of the base (el), and transmissivity (T) of the unconfined portion of the Columbia aquifer for Sussex County, Delaware. Files containing the point data used to create the grids are also included. Mapping was supported by the Delaware Department of Natural Resources and Environmental Control and the Delaware Geological Survey.

These grids were produced with the methods described in Andres and Klingbeil (2006). Additional analyses of the hydrogeologic framework and grids are also contained in that report. Briefly the method to determine b and el of the aquifer includes assessing the thickness and lithology of subsurface materials in descriptive and geophysical logs and using computer-based interpolation to estimate b and el across the study area. The method to determine T of the aquifer includes interpreting T at points of descriptive and geophysical logs and using computer-based interpolation to estimate T across the study area. Separate grids were determined for eastern and western Sussex County and were merged and smoothed to minimize edge effects.

The b and el grids have 30-m horizontal and 1-ft vertical resolutions. The T grid has a 90-m horizontal resolution and units are in feet-squared per day. In the accompanying digital data, grid world files are in UTM-18N, 1983 projection in meters and elevations are in feet, NAVD 1988. Aquifer b is reported in feet. Grid files are in ESRI, Inc., grid format.

REFERENCES CITED

- Andres, A. S., and Klingbeil, A. D., 2006, Thickness and transmissivity of the unconfined aquifer, eastern Sussex County, Delaware: Delaware Geological Survey Report of Investigations No. 70, 19 p., 1 plate.
- ESRI, 2004, ArcMap v. 9, Redlands, California.