

ABSTRACT

Theme

Water-level elevation; Santa Fe Group aquifer; Tesuque and Ancha Formations; ground water flow

Place

Santa Fe Area, Southern Española Basin, New Mexico

Description

Ground-water-elevation data from wells and springs in the Santa Fe area were compiled from existing sources and supplemented with well measurements taken between 2003 and 2005 by the New Mexico Bureau of Geology and Mineral Resources (NMBGMR) at New Mexico Tech, the New Mexico Office of the State Engineer (NMOSE), and the U.S. Geological Survey (USGS). Existing data sources include the New Mexico Environment Department (NMED), the City and County of Santa Fe, private consultants and drilling companies, and records of the Eldorado Water and Sanitation District (EWSD). Water level data originate from municipal, commercial, exploration, and private domestic wells and the NMOSE multi-level piezometers. The ground-water-elevation contours were interpolated from point data using an inverse distance method (IDW) in ARC INFO 9.3, followed by manual adjustment at study area boundaries and well fields.

The ground-water elevation contours are used in additional data analysis, including:

- Generation of flow lines** drawn normal to equipotential lines that approximate horizontal flow.
- Delineation of ground-water flow units** where boundaries are flow lines that encompass discharge zones and their contributing recharge areas.
- Delineation of vertical hydraulic-gradient** directions in multilevel piezometers, piezometer nests, and adjacent domestic well pairs completed at different depths in the Tesuque Formation or in different hydrostratigraphic units.

Purpose

To illustrate important aspects of regional ground water flow.

Constraints on accessing and using the data

Access constraints: None.

Use constraints: Users are requested to acknowledge the author (P. Johnson, NMBGMR) in any public use of these data.

Publication Information

Who created the data: Peggy Johnson (NMBGMR) – Collection, compilation, analysis, and interpretation of water-level data. Brigitte Felix (NMBGMR) – ARCGIS spatial analysis and interpolation, cartography.

Date and time: Data compilation, analysis and interpretation spanned several years from 2007-2009.

Time period for which the data are relevant

Description: The data compiled from existing sources include measurements taken between 2000 and 2005. Primary depth-to-water measurements were taken between 2003 and 2005.

Date and time: 2000 to 2005

Status of the Data

Depth-to-water data represent aquifer fluid potential at specified locations during the time period between 2000 and 2005. These data can change over time in response to future ground water depletions or ground water recharge. The geometry of the potentiometric surface could undergo minor changes with addition of depth-to-water measurements at new locations; however, such changes are expected to be insignificant.

Data Update Frequency: None planned

Details about this document

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