WATER-TABLE MAP OF THE SAN JOSE WELL FIELD AND VICINITY, ALBUQUERQUE, NEW MEXICO, SPRING 1981

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Abstract

In the spring of 1981, water-level measurements were made within and near the San Jose well field in Albuquerque, New Mexico. The water-table contours have a steep eastward slope from the Rio Grande into the San Jose well field and a lesser slope eastward from the well field.

Introduction

Water samples collected from the San Jose well field in Albuquerque during 1980 contained several undesirable organic compounds. The New Mexico Environmental Improvement Division (NMEID) is investigating this occurrence under a grant from the U.S. Environmental Protection Agency. The NMEID requested the U.S. Geological Survey to assist in this investigation by defining the configuration of the water table in the vicinity of these wells. This map may be of use to NMEID in determining the direction of ground-water movement and in selecting test wells for water-quality sampling.

Approach

The depth to water in accessible wells within and in the vicinity of the San Jose well field was measured during the spring of 1981. All measurements, shown in table 1, were made in as short a time interval as possible and before summer withdrawals began. An arrangement was made for any withdrawals to be stopped in nearby groups of wells 24 hours before water-level measurements were made.

It is assumed that the water levels were near static conditions, or at least under minimal stress, during this period. Measurements were made in nine city wells and three private wells (Public Service, Amerigas, and Insulbead). These measurements and the altitude of the water surface in the Rio Grande were used as controls to construct the water-table contour map of the San Jose well field area. The position of the Rio Grande at the time of the measurements was known only to be within the area between the San Jose and Riverside Drains. Flow in the Rio Grande was about average for the season during the measurement period.

Significance of data

A water-table map published by the U.S. Army Corps of Engineers (1979) in an Urban Studies Program shows a water-level cone of depression centered east of the San Jose well field, a steep eastward slope of the water-table contours east of the Rio Grande, and a steep westward slope of the water-table contours in the foothills of the Sandia and Manzano Mountains (about 12 miles east of the Rio Grande). The present study is of the western edge of that large cone of depression.

The 1981 water-table contours have a steep eastward slope from the Rio Grande into the San Jose well field. The contours indicate that the water table continues to slope gradually eastward from the San Jose well field when that well field is unstressed. Local gradients during pumping in the San Jose well field are not known.

It was assumed in drawing the contour map that there is a hydraulic connection between the Rio Grande and the local ground-water system. Available information does not prove the existence of a continuous hydraulic connection between the river and the water table. Therefore, due to lack of control points, the contours are dashed on the map.

Reference

U.S. Army Corps of Engineers, 1979, Albuquerque Greater Urban Area, Urban Studies Program: Appendix III, Water Supply, p. 4-26.

Conversion factors

Multiply inch-pound unit	By	To obtain metric unit
foot	0.3048	meter
mile	1.609	kilometer

Table 1.--Water-level data

Well name	Date Measured	Total well depth (feet)	Perforated interval (feet)	Depth to water (feet)	Land-surface altitude (feet)*	Water-table altitude (feet)*
San Jose 1	4-03-81	306	-	35.3	4950	4915
San Jose 3	3-31-81	504	360- 504	47.2	4954	4907
San Jose 4	4-02-81	1,000	264- 996	92.4	4992	4900
San Jose 5	4-01-81	1,200	192-1,032	43.7	4946	4902
San Jose 6	3-31-81	912	180- 912	36.5	4941	4905
Yale 1	4-02-81	960	336- 960	264.6	5160	4895
Yale 3	4-03-81	1,191	351-1,179	230.7	5127	4896
Yale 4	4-01-81	1,004	320- 992	179.9	5080	4900
Burton 1	4-03-81	1,000	452-1,000	431.3	5324	4893
Public Service	3-30-81	-	-	208.3	5107	4899
Amerigas	5-07-81	-	-	95.9	5001	4905
Insulbead	5-07-81	-	-	58.3	4973	4915

* Above National Geodetic Vertical Datum of 1929