



**INTRODUCTION**

This report describes the hydrogeologic characteristics of the valley-fill aquifer in a reach of the Arkansas River valley in Crowley and Otero Counties, southeastern Colorado. The report consists of three maps that show: (1) The altitude and configuration of the bedrock surface; (2) the altitude and configuration of the water table in the spring of 1966; and (3) the saturated thickness of the valley-fill aquifer in the spring of 1966. Each map shows the extent of the saturated valley-fill material. The saturated-thickness map also shows selected values of aquifer transmissivity. Three other reports describe the hydrogeologic characteristics of the valley-fill aquifer in a reach of the Arkansas River in Bent County (Hurr and Moore, 1972); Prowers County (Nelson and others, 1989a); and Pueblo County (Nelson and others, 1989b), southeastern Colorado.

**METHODS OF STUDY**

Information presented in this report is based on data published by Weist (1962), Wilson (1965), and Major and others (1970), and on data located in the files of the U.S. Geological Survey. Bedrock-altitude data were obtained from test holes, wells, and observation wells. Test holes were drilled by contractors and by the U.S. Geological Survey. Water-level data were collected by the U.S. Geological Survey in the spring of 1966. The saturated-thickness map is based on data from wells in which the altitude of the bedrock surface and the water level were measured. The intersections of the bedrock contours and the water-table contours provided supplemental saturated-thickness values that were used as an aid to contouring. Surface mapping and test-drilling data were used by Major and others (1970) to define the extent of the valley-fill aquifer. The transmissivity values were estimated by Wilson (1965) from aquifer-test data.

**REFERENCES CITED**

Hurr, R.T., and Moore, J.E., 1972, Hydrogeologic characteristics of the valley-fill aquifer in the Arkansas River valley, Bent County, Colorado: U.S. Geological Survey Hydrologic Investigations Atlas HA-461, scale 1:62,500, 2 sheets.

Major, T.J., Hurr, R.T., and Moore, J.E., 1970, Hydrogeologic data for the lower Arkansas River valley, Colorado: Colorado Water Conservation Board Water Resources Basic-Data Release 21, 125 p.

Nelson, G.A., Hurr, R.T., and Moore, J.E., 1989a, Hydrogeologic characteristics of the valley-fill aquifer in the Arkansas River valley, Prowers County, Colorado: U.S. Geological Survey Open-File Report 89-254, scale 1:62,500, 3 sheets.

1989b, Hydrogeologic characteristics of the valley-fill aquifer in the Arkansas River valley, Pueblo County, Colorado: U.S. Geological Survey Open-File Report 89-256, scale 1:62,500, 3 sheets.

Weist, W.G., Jr., 1962, Records, logs, and water-level measurements of selected wells, springs, and test holes, and chemical analyses of ground water in Otero and the southern part of Crowley Counties, Colorado: Colorado Water Conservation Board Basic Data Report 11, 54 p.

Wilson, W.W., 1965, Pumping tests in Colorado: Colorado Water Conservation Board Circular 11, 361 p.

**EXPLANATION**

—3960— BEDROCK CONTOUR—Shows altitude of the bedrock surface. Dashed where approximately located. Hachures indicate depression. Contour interval 20 feet. Datum is sea level.

— — — — — APPROXIMATE LIMIT OF VALLEY-FILL AQUIFER

● DATA POINT

**CONVERSION FACTORS**

The inch-pound units in this report may be converted to the International System (SI) units by using the following conversion factors:

Multiply	By	To obtain
foot	.3048	meter
mile	1.609	kilometer
foot squared	.0929	meter squared
per day		per day

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

MAP SHOWING ALTITUDE AND CONFIGURATION OF THE BEDROCK SURFACE BENEATH THE VALLEY-FILL AQUIFER

**HYDROGEOLOGIC CHARACTERISTICS OF THE VALLEY-FILL AQUIFER IN THE ARKANSAS RIVER VALLEY, CROWLEY AND OTERO COUNTIES, COLORADO**

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