

## Description of aquifer test for Rose Peak # 5 well.

A single-well constant rate test of the well was conducted by Sargent Irrigation Company of Reno, Nevada following drilling and installation of the well. Copies of time-drawdown and pump-rate data were obtained from files of Lyon County (James Youngblood, written commun. 2008). Results of the aquifer test will be used in the development of a numerical ground-water flow model of the Middle Carson River basin, project # 9705-D29BE. Specifically, the estimated transmissivity will be used to develop a relation between transmissivity and specific yield. The relation is planned to be used with data from driller's logs to develop a preliminary distribution of transmissivity for the model.

The well is located at 39.25979° N, 119.58186° W, NAD 83, in the Carson Plains subbasin of the Dayton Valley Hydrographic Area, about 1.7 miles northeast of Dayton, Nevada; NWIS site ID [391535119345501](#). The well is completed in a basin-fill aquifer to a depth of 200 feet below land surface (see attached Nevada Driller's Log # [63887](#) for construction details).

Prior to the constant-rate test, drilling of the well commenced on March 19, 1996, with air-lift developing taking place on March 26<sup>th</sup>, and a 3-hour step test completed by 1PM on March 31<sup>st</sup>. The constant-rate test was begun on April 2, 1996 with a rate of about 1,450 GPM for about 6 hours. Static water level at the start of the constant-rate test was 0.15 feet higher than at that at the start of the step-drawdown test suggesting the new static water level was the result of well development during the step-drawdown test. A line shaft pump was set at a depth of 120 feet in the well, and an 8-inch flow meter was used to measure discharge. The methods of water-level measurements, location of the discharge of pumped water, and trends in pre-test water-levels are not known.

Time-drawdown data were analyzed using an Excel spreadsheet program (Halford and Kuniansky, 2002). The Cooper-Jacob analysis was used for the constant rate tests. Plots of the time-drawdown data combined with the estimated best-fit straight line used to estimate T, and time-drawdown data are shown in attached copies of the spreadsheet. A decrease in the slope of late-time data may be due to recharge from the nearby Carson River or, alternatively, from highly permeable sediments present at greater depths than the well.

Results of the test indicate a hydraulic conductivity and transmissivity of 140 ft/day and 27,000 ft<sup>2</sup>/day, respectively.

## References Cited

Halford K.J., and Kuniansky, E.L. 2002, Documentation of spreadsheets for the analysis of aquifer pumping and slug test data: U.S. Geological Survey Open-File Report 02-197, 54 p.