

# NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
4919	Cox	Questa	QARC	Nye	7SC	Analysis of Pump-Spinner Test and 48-Hour Pump Test in Well NC-EWDP-7SC, Near Yucca Mountain, Nevada, NWRPO-2002-03, March 2002, Prepared by Questa Engineering Corporation
Doc. Date	3/1/2002	General Doc. Type	Report	Keyword2	Pump-spinner	
Entry Date	3/19/2002	Detailed Doc. Type	Technical Report	Keyword3	Hydrologic	

<b>Data Originator Preparer</b>	Dave Cox And Scott Stinson
<b>Title of Data</b>	Analysis of Pump-Spinner Test and 48-Hour Pump Test in Well NC-EWDP-7SC, Near Yucca Mountain, Nevada
<b>Description of Data</b>	This record contains a hard copy and electronic file of the subject report. The report describes the test procedure, analysis methodology, results and hydrologic interpretation of a pump-spinner test and associated 48-hr. pump test and 17.7-hr. recovery period conducted in March 2001 in well NC-EWDP-7SC. The purpose of the test was to determine aquifer properties, such as permeability and well efficiency, for subsurface characterization. During the NC-EWDP-7SC pump test and recovery, pressure was monitored in the adjacent well NC-EWDP-7S to evaluate inter-well communication.
<b>Data Collection Method</b>	Data collection is described in the Description of Spinner Logging (Section 2.1.2) and Test Procedures and Description (Section 2.2.1) sections of the report. In accordance with TP-9.0, a series of spinner logs were run prior to and during pumping. In accordance with TP-9.0 and TP-9.5, Westbay Mosdax pressure sensors were placed above the submersible pump in well NC-EWDP-7SC, and below the water table in the nearest offset well (NC-EWDP-7SC), to measure the pressure response to pumping and recovery. Barometric pressure during the test was also recorded. Pump rates were determined using a 50-gal. (189.3-L) drum and a stopwatch, and also with a turbine flow meter.
<b>Data Location(s)</b>	NC-EWDP-7SC is located on a paleospring deposit at the south end of Crater Flat, approximately 2 miles (about 3 km) north of Highway 95, or about 10 miles (about 16 km.) northwest of the Lathrop Wells Junction.
<b>Data Collection Period(s)</b>	Field activities were conducted in March 2001. A preliminary test interpretation was prepared in April 2001, and the final report was completed in March 2002.
<b>Data Source(s)</b>	The original test data were submitted by Nye County personnel to the NWRPO. See field scientific notebook #127 (RID 4540); RID 4018 (spinner log); and RID 4173 (pressure and temperature data). References to RIDs containing supporting well information, well logs, and other original data collected from NC-EWDP-7SC can be found on the <a href="http://nyecounty.com">nyecounty.com</a> web site under "EWDP" and "EWDP-7SC".
<b>Data Censoring</b>	The turbine flow meter readings were inaccurate because of the low pump rate, so the hand measurements with a stopwatch and drum were used for rate determination. The Westbay Mosdax pressure sensor in the observation well was outside its calibration date, and the sensor failed 12.5 hr. into the recovery. Data beyond that time were not utilized for the analysis. Water level sounder measurements were recorded as a check, and were found to be within 0.08 ft of the Westbay Mosdax readings. The analysis was prepared utilizing the Westbay information during the time the sensor was reading properly. The original test data may be viewed in their entirety at the NWRPO QA Records Center in Pahrump, NV.
<b>Data Processing</b>	Data processing of the spinner data is described in the Spinner Log Fundamentals section (Section 2.1.1) of the report. Data processing of the pressure data is described in the Pumping Well Recovery Analysis (Section 2.2.2) and Model Analysis (Section 2.2.3) sections of the report.
<b>Data Limitations</b>	The accuracy of the pressure data recorded during the test was limited by the failure of one of the pressure sensors. The accuracy of the rate data was limited by the low pump rate. The test interpretation is limited by the inherent differences between the actual aquifer system present, and the idealized aquifer model assumed in the analysis procedure. Analysis of the spinner data indicated most of the water production came from two screens, with very small water production from another screen and no measurable production from the fourth screen. The pump and recovery test was analyzed using a two-layer model, with the well located in the center of a circular region with reduced transmissibility. The presence of a damaged region around the well is

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consistent with the observations that large amounts of polymer and bentonite gel mud were

lost while drilling and completing this well, and that two instances of "stair-step" changes in pressure occurred in NC-EWDP-7SC during the pumping period, although no corresponding changes were seen in the nearby observation well. Differences between the active well results and the observation well results are considered to reflect different aquifer properties at distances greater than about 10-20 ft. (about 3-6 m) from the active well.

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**Governing  
QA Docs.** TP-9.0, TP-9.5, TP-9.7

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**Frequency  
of  
Transmittal** One time only

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**Direct Questions  
About Data  
To-** Nye County QA Records Center