

NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
5478	Cox	Questa	QARC	Nye	22S	Preliminary Analysis of Pump-Spinner Tests and Pump Test in Well NC-EWDP-22S, Near Yucca Mountain, Nevada, NWRPO-2002-06, January 2003, Prepared by Questa Engineering Corporation, and Technical Review Comments
Doc. Date	1/2/2003	General Doc. Type	Report	Keyword2	Pump-spinner	
Entry Date	2/6/2003	Detailed Doc. Type	Technical Report	Keyword3	Hydrologic	

Data Originator Preparer Dave Cox And John Campanella

Title of Data Preliminary Analysis of Pump-Spinner Tests and Pump Test in Well NC-EWDP-22S, Near Yucca Mountain, Nevada, NWRPO-2002-06, January 2003, by Questa Engineering Corporation

Description of Data This record contains a hard copy of the subject report. The report describes the test procedure, analysis methodology, results and hydrologic interpretation of pump-spinner tests and a pump test and associated recovery conducted in March 2002 in NC-EWDP-22S. The purpose of the tests was to determine aquifer properties, such as permeability and well efficiency, for subsurface characterization, and to use in planning and design for a proposed Nye County Alluvial Tracer Test. During the NC-EWDP-22S testing, pressure was monitored in the adjacent observation wells NC-EWDP-22PA and -22PB to evaluate inter-well communication.

Data Collection Method Data collection is described in the Description and Results of Static Spinner Logging (Section 2.1.2) and Well NC-EWDP-22S Test Procedures (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 the pumping well, and below the water table in the offset wells, 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.

Data Location(s) NC-EWDP-22S is located in alluvial deposits on the eastern portion of Fortymile Wash, approximately 4 miles (about 6.5 km) north-northwest of the Lathrop Wells Junction. NC-EWDP-22PA lies about 59 ft (18 m) north of NC-EWDP-22S, and NC-EWDP-22PB is located about 59 ft (18 m) east of NC-EWDP-22PA.

Data Collection Period(s) Field activities were conducted in March 2002. The final analysis report was completed in January 2003.

Data Source(s) The original test data were submitted by Nye County personnel to the NWRPO. See supporting data and analysis files in RIDs 5007 and 4948, and Scientific Notebook #147 (RID 6262). References to RIDs containing supporting well information, well logs, and other original data collected from NC-EWDP-22S can be found on the nycounty.com web site under "EWDP" and "EWDP-22S".

Data Censoring Detailed analysis of the pressure information indicated that the pressure changes caused by pumping decayed quickly, such that the only test data from this well that are reliable for pressure transient analysis are those in the first hour or less after a rate change. In addition, during the pump test, the data loggers were set to record data when pressure changed by 0.1 psi or 10 min. had elapsed since the last recorded point. With these settings, very few data points were recorded. Furthermore, there appears to have been an 80 sec. time shift between the data logger and the event log during the pump test. In contrast, the data logger gathered data every minute during the pump-spinner test; accordingly, the pressure data gathered during the pump-spinner test were analyzed to determine hydrologic properties of the aquifer, instead of the pump test data. All of the original test data may be viewed in their entirety at the NWRPO QA Records Center in Pahrump, NV.

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Data Processing 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 Well NC-EWDP-22S Pumping Well Drawdown and Recovery Analysis (Section 2.3.1) section of the report.

Data Limitations Because of problems with the data frequency during and after the pump test, the pressures recorded during the pump-spinner test were the only pressure data acceptable for analysis. High permeability in the alluvial aquifer allowed pressures to recover to approximately steady values within 20 to 60 min. following shut-in. Variations in pressure after these times apparently resulted from barometric effects, tidal effects, possible lateral differences in aquifer properties, and/or differences between the storage capacity of the layers. Therefore, the only test data from this well that are considered reliable for pressure transient analysis are those in the first hour or less after a flow rate change. The test interpretation is limited by the inherent differences between the actual aquifer system present, and the idealized four-layer aquifer model assumed in the analysis procedure. Analysis of the spinner data indicated all four screened intervals were actually producing. Although there was an observation well reading corresponding to each screened interval in the pumping well, the aquifer system at this location is very complex, and therefore, the computed results are considered approximate. Subsequent testing of individual zones, not covered in this report, should help improve the accuracy and reliability of the interpretations.

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

Frequency of Transmittal One time only

Direct Questions About Data To- Nye County QA Records Center