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Dr. Robert J. Wright  
 Senior Technical Advisor  
 High Level Waste Technical  
 Development Branch  
 Division of Waste Management  
 U. S. Nuclear Regulatory Commission  
 Washington, DC 20555

WM Record File <u>101.2</u>	WM Project <u>WM-10</u>
	Docket No. _____
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Distribution: <u>RW - WMHT</u>	_____
(Return to WM, 623-SS)	<u>C2</u>

Dear Dr. Wright:

**REQUEST FOR CLARIFICATION OF BWIP SCR (SCR-18)**

Your memorandum to D. Squires, dated April 1, 1983, requested a summary of all hydrologic test data, including hydraulic heads, for boreholes DC-4/5. The following is a summary of hydrologic test data and hydraulic property values available from testing completed at boreholes DC-4/5.

**1. Science Applications, Inc. Testing**

Two air-lift pumping tests and four slug tests were conducted between November 13 and December 6, 1979 on the Umtanum basalt flow top, over the depth intervals 3,591 to 3,651 feet (DC-4) and 3,578 to 3,636 feet (DC-5) below ground level. Hydrologic testing was performed with downhole Lynes, Inc. pressure probe test systems. Transmissivity values reported for this zone range between  $10^{-4}$  to  $10^{-6}$  ft<sup>2</sup>/sec. A static formation pressure test was not conducted and, therefore, no static hydraulic head value was reported by Science Applications, Inc. (SAI) for the test interval.

(NOTE: Transmissivity values for this test interval were not included in the Site Characterization Report (SCR) due to SAI acknowledged test equipment problems.)

**2. Basalt Waste Isolation Project Testing**

a. Composite Borehole Testing. One air-lift pumping test was conducted between June 19 through 20, 1981, for the composite

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Grande Ronde basalt, over the depth interval 2,639 to 3,998 feet (DC-4) and 2,635 to 3,990 feet (DC-5) below ground level. Transmissivity values reported for the composite zone range between  $10^{-5}$  and  $10^{-6}$  ft<sup>2</sup>/sec. No static composite Grande Ronde Basalt hydraulic head value was reported due to non-equilibrium conditions which existed in the borehole prior to testing.

(NOTE: Hydraulic property values from this test were reported in the SCR.)

- b. Cohasset Basalt Flow Top. Three constant discharge pumping tests and three slug tests were conducted between October 18 and November 29, 1982 on this horizon, over the depth interval 2,945 to 2,998 feet (DC-4) and 2,950 to 3,004 feet (DC-5) below ground level. Hydrologic testing was performed with downhole TAM/Seling pressure probe test systems. Preliminary transmissivity values reported for this zone range between  $10^{-5}$  and  $10^{-6}$  ft<sup>2</sup>/sec. No static hydraulic head value was measured for the test interval due to non-equilibrium conditions which existed in the borehole prior to testing.

(NOTE: Preliminary test results for this test interval were reported in BWIP, Drilling and Testing Quarterly Report, RHO-BW-SR-82-2 4Q.)

### 3. Current Status

Currently, boreholes DC-4/5 are in the recovery phase of vertical hydraulic conductivity testing for the Cohasset flow top and overlying basalt flow interior. Results from the test will be reported after completion of testing.

### 4. Future Tests

The test plan for borehole site DC-4/5 includes testing to continue through fiscal year 1985. Hydrologic tests planned include: standard candidate horizon testing, tracer tests, additional vertical hydraulic conductivity tests, and long-term hydraulic head monitoring for selected test horizons.

If you have questions covering this material, please call D. J. Squires of my staff.

Very truly yours,

*D. J. Squires*  
for O. L. Olson, Project Manager  
Basalt Waste Isolation Project Office

BWI:DJS

cc: M. W. Frei, DOE-HQ