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 U. S. Nuclear Regulatory Commission
 Washington, DC 20555

WM Record File	101.2
WM Project	WM-10
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Dear Dr. Wright:

REQUEST FOR CLARIFICATION OF BWIP SCR (SCR-10)

As requested by your letter dated January 28, 1983, and discussed with you, D. Alexander, P. Justus, J. Starmer, J. Corrado, NRC; J. LaRue, J. Myers, Rockwell Basalt Project; and D. Squires of my staff, the following response is provided in answer to the questions presented.

Question

What is the standard groundwater composition used in sorption and hydro-thermal experiments for groundwaters within the Grande Ronde Basalt? There are apparent inconsistencies in data provided in: 1) Table 5-53 of the SCR; 2) Table II of Ames, L. L. et. al. "Sorption of Uranium and Cesium by Hanford Basalts and Associated Secondary Smectite," Chemical Geology, 35, pp. 205-225; and 3) Table 2 of RHO-BW-ST-38P.

Response

The groundwater composition data found in Table II of Ames, L. L., et. al. (1982) is from two sources. The composition referred to as GR-1 is from RHO-BWI-LD-11 by R. A. Deju (September 1978). The composition data referred to as GR-2 is from the data package RSD-BWI-DP-007 (July 1980).

The table of groundwater compositions referred to in the SCR is the anticipated range in concentrations in the Reference Repository Location (RRL). The table was compiled prior to the start of a sampling program and was based on water analysis from drill holes near but outside the RRL. This table is admittedly out of date since we now have data from holes drilled within the RRL such as RRL-2 and DC-16A. This new data will be included in the SCR update.

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The groundwater composition data found in Table 2 of RHO-BW-ST-38 P is from RHO-BW-ST-37 P by T. E. Jones (April 1982). This reference contains the most recent synthetic groundwater formulation for use in hydrothermal interaction experiments.

Question

Are data provided in Tables 6, 7, and 8 of RHO-BW-ST-38 P "Comparison of the Hydrothermal Stability of Simulated Spent Fuel and Borosilicate Glass in a Basaltic Environment," characteristic of groundwater at 300°C? If not, what are the proper values?

Response

The data provided in Tables 6, 7, and 8 of RHO-BW-ST-38 P indicate that some components in solution have reached steady-state concentrations with respect to time, whereas some components have not. However, all components reached a concentration maximum sometime during the course of the experiments, followed by a subsequent decrease in concentration with time.

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

Very truly yours,

R. P. Laget for

O. L. Olson, Project Manager
Basalt Waste Isolation Project Office

BWI:DJS

cc: R. Stein, DOE-HQ