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Nez Perce

ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT
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December 23, 1998

Mr. Marcel Bergeron
Pacific Northwest National Laboratory, MSIN K9-33
P.O. Box 999
Richland, Washington 99352

RE: Geologic Framework for the Site-Wide Groundwater Model

Dear Mr. Bergeron:

The Nez Perce Tribe Environmental Restoration and Waste Management Program (ERWM) appreciates being invited to participate in the development of a site-wide groundwater model. Tribal consultation on this issue is important because modeling results will be used to support remediation decisions that will ultimately affect the retained rights (Treaty of 1855) to the Mid-Columbia River.

ERWM has identified several areas of the geologic framework for changes and clarification. These suggested changes and clarifications are as follows:

1. The geologic framework is inadequately documented. Few geologic cross-sections are shown. Those that are shown should be labeled and tied to well control. Without being shown supporting data, it is difficult to assess the validity of Pacific Northwest National Laboratory's (PNNL) proposed Site-Wide Groundwater Model. For example, cross-section A-A' (Cole and others, 1997), shown in Figures 6.2 and 6.3, is not labeled or shown on Figure 6.1. Wells shown on cross-sections (Figures 2 and 3, Thorne, 1998) are mislabeled. PNNL has interpreted hundreds of boreholes, but PNNL hasn't documented that the boreholes in the groundwater model have been interpreted in a consistent manner. We recommended that PNNL develop a series of sitewide geologic cross-sections tied to boreholes to ensure that data from boreholes are interpreted in a consistent manner. This documentation could be quickly and cheaply accomplished by using Lindsey (1995) as the basis for the geologic framework.

2. Presently, information from about 600 boreholes is used to develop the geologic framework. Eventually, the geologic framework should incorporate all available and useable borehole information. Site programs and entities use about 2400 wells for groundwater monitoring (USDOE, 1995).

3. The rationale for regrouping Lindsey's (1995) Ringold Units into model layers is not adequately stated in either USDOE (1998) or Wurstner and others (1995). In particular, model layer 5 contains Lindsey's (1995) unit E and a portion of the Upper Ringold. As the energy of the depositional environment has a direct correlation with porosity and permeability, it appears that units from a high-energy depositional environment (unit E) are incorrectly grouped with units from a low-energy depositional environment (Upper Ringold) to create model layer 5.

4. The cross-sections shown in Poeter and Gaylord (1990) do not appear to support the isopach of unit 4 (Figure 2.21) shown in Wurstner and others (1995).

5. Paleoflow directions and landforms associated with the cataclysmic floods shown on Figure 1.1-6 (USDOE, 1988) do not appear to support the isopachs of unit 4 (Figure 2.21) and unit 1 (Figure 2.27) shown in Wurstner and others (1995).

6. A map of the distribution of transmissivity (Figure 3.3, Cole and others, 1997) is shown for the site; however, this map masks the transmissivity of each aquifer. The transmissivity of each model layer, that represent aquifers, should be shown so that the spatial distribution of transmissivity can be assessed within each aquifer.

If you wish to discuss these comments further or require additional information, please contact me by telephone on (208) 843-7375, (208) 843-7378 (fax) or e-mail at *stans@nezperce.org*.

Sincerely,

Stanley M. Sobczyk

Stanley M. Sobczyk
Environmental Specialist
Nez Perce Tribe ERWM

In Concurrence Jack H. Bell

Jack H. Bell, Manager
Department of Natural Resources

cc: R. D. Hildebrand, DOE-RL
Kevin Clarke, DOE-RL, Indian Programs Manager
Dib Goswami, Ecology
Larry Gabois, EPA
Wade Riggsbee, YIN
Mike Graham, BHI
Peter Wierenga, U. of Arizona

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