

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

20061-075

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December 8, 2005

Mr. Todd Martin Hanford Advisory Board 713 Jadwin Ave., Suite 4 Richland, WA 99352

Re: Hanford Advisory Board (HAB) Consensus Advice #183:

Bulk Vitrification

Dear Mr. Martin:

Thank you for the Board's letter of advice on the Bulk Vitrification Demonstration Project. Ecology shares many of your concerns and appreciates the time and attention the Board has devoted to this project.

Background

Ecology agrees that the bulk vitrification process must produce a glass product that performs as well as the Low Activity Waste (LAW) glass referenced in the 2001 ILAW Performance Assessment to be a viable alternative to a second Waste Treatment Plant (WTP) LAW melter facility. Assuming the bulk vitrification process can produce "good" glass, the state has additional criteria for determining if we will allow a full scale bulk vitrification facility at Hanford. Design, construction, and operational costs are significant factors. However, Ecology must consider other important factors in its decision process which include: the timing for when a full scale bulk vitrification facility can be operational; flexibility on treating different wastes; ability to achieve higher waste loading; the volume of waste produced; secondary waste; and, a variety of lesser issues. These criteria have been shared previously with the Board and are provided as an attachment to this letter.

We agree that the increased costs of the Bulk Vitrification Demonstration Project are a matter of concern. However, we think it is important to note that the \$150 million not only includes construction of the project, but also includes all previous lab and field testing and analytical costs, retrieval of S-109, and projected operational costs for production and testing of the 50 waste boxes. It is important to compare like costs when analyzing the costs of the project. The projected construction cost of the Bulk

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Vitrification Demonstration Project is \$97M. This is the figure we will be using to estimate the cost of a full scale facility. This represents a much smaller percentage of the baseline cost compared to construction of the existing LAW Vitrification Plant. Further, the cost of the existing LAW Vitrification Plant is also increasing. We will be able to review new Estimate at Completion data in spring of 2006. If a second LAW Vitrification Plant is built, it will need to be twice the size of the current LAW Vitrification Plant.

The state is extremely concerned that the federal government has not provided sufficient funds to complete the requirements of all TPA milestones. This includes the demonstrations necessary to meet TPA Milestone M-62-08 and determine how we will treat the remaining Hanford tank waste. The state continues to believe that bulk vitrification has the potential to provide additional "good as glass" tank treatment while providing additional advantages over a second WTP LAW facility. The Bulk Vitrification Demonstration Project is the only way to evaluate these possibilities.

Response to Advice

- Ecology's decision to stop the Bulk Vitrification Demonstration Project is different from and much more subjective than our decision to choose bulk vitrification to treat the remaining waste. Each test box is designed to answer specific questions about the viability of the technology as described by our criteria to accept bulk vitrification as a treatment option. We are watching these tests very closely and our main priority is that it produces good glass. The nature of a demonstration project is that you don't know what the technology can do, and stopping too soon could mean missing an opportunity to do better than the baseline. We share your concerns on cost and will keep that in perspective as we move through this demonstration.
- We agree with the Board's suggestion for an interim cost comparison to be delivered in June 2006. The new BNI estimate at completion (EAC) will have been completed and reviewed by the Corps of Engineers. Additionally, U.S. Department of Energy will have completed the design of the demonstration project and should be able to provide an accurate cost estimate for the full-scale facility. However, we are not sure there will be enough data to evaluate all the performance aspects of bulk vitrification glass at this time.
- Ecology will be comparing the results of the Bulk Vitrification Demonstration Project to the criteria for accepting bulk vitrification as an alternative to a second WTP LAW facility. When Ecology becomes convinced that the potential benefits of bulk vitrification are outweighed by the drawbacks and risks, we will stop the demonstration. While it is difficult to identify a specific point, we can say that if

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tests demonstrate that the quality of bulk vitrification glass is not comparable to the WTP LAW glass, or that the bulk vitrification glass could not adequately capture contaminants of concern, we would stop the demonstration.

Again, thank you for the Board's advice and consideration. If you have additional questions or concerns, please contact Suzanne Dahl at (509) 372-7892.

Sincerely,

Jay J. Manning

Director

Enclosure

cc:

Laura Cusak, Ecology Suzanne Dahl, Ecology

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