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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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April 11, 1997

Mr. Dave Evans
U.S. Department of Energy
P.O. Box 550, MSIN: R3-79
Richland, WA 99352

Dear Mr. Evans:

Re: Transmittal of Comments for Sampling Plan, WHC-SD-WM-EV-108

The Washington State Department of Ecology (Ecology) has completed its review of the *Organic Phase and Aqueous Phase Sampling Analysis Plan (WHC-SD-WM-EV-108)*. Please see the enclosed comments.

Ecology understands implementation of this plan has already occurred. Conclusions made through the implementation of this document directly relate to completion of some of the B-Plant end points currently defined in the B-Plant End Points Document. Therefore, it is necessary for Ecology to determine how implementation of this plan has impacted the transitioning of this part of facility. Deficiencies noted in the comments will be worked out between Ecology and the U.S. Department of Energy as effectively as possible.

Written response to these comments is requested within 30 days of receipt of this letter. Comment response will be used to determine whether the associated end points have been properly completed. Ecology also requests the results from sampling (i.e., validated/non-validated data packages) be provided as soon as possible.

If you have any questions or concerns regarding this information, please contact me at (509) 736-3012.

Sincerely,

Ted A. Wooley, B-Plant Project Manager
Nuclear Waste Program

TAW:sdb

cc: Rick Gonzalez, USDOE
Steve Godfrey, B&W

Mary Lou Blazek, ODOE
Administrative Record



bcc: Joan Bartz, Ecology
Moses Jaraysi, Ecology
Ron Skinnarland, Ecology

Ecology's comments on *Organic Phase and Aqueous Phase Sampling Analysis Plan, WHC-SD-EV-108, Rev. 1, January 1997*

Note: The document was not reviewed and approved by Ecology prior to completion of the work.

General Comments:

1. The document refers to a data quality objectives (DQO) process as the basis for determining the sampling and analysis activities, as well as, the parameters, methods, method detection limits, and action levels. Note that without the participation of the regulatory agency (i.e., Ecology), the DQO can not be considered complete knowing that the elements it focused on include regulated units and waste.
2. The title of the document should have been "Sampling *and* Analysis Plan" because it deals with both aspects of the work. Note that consistency in document titles is important for indexing and searching the Administrative Record.
3. Neither the Introduction, nor the Purpose, are clear regarding why the sampling and analysis occurred. For example, the aqueous waste was being evaluated only for transfer to the Hanford Tank Farms (with no consideration of alternatives) and the organic waste was being evaluated for possible management by an off-site, commercial incinerator or for long-term, onsite storage. This information was embedded in later sections of the document, but until then, the purpose of the work was not fully understandable.
4. The document does not address waste designation under Washington State regulations. Has this waste been designated per WAC 173-303 requirements? If so, please reference your designation documents.

Specific comments:

5. Sec. 1.2, para. 2, sentence 1: Description of quality assurance/quality control requirements lacks adequate detail. It is not possible for Ecology to compare the information in this section with appropriate state and federal quality assurance/quality control. The type and quantity of information will be clarified as part of the NOD resolutions.
6. Sec. 2.2: The text does not describe the sampling kits, required cleaning, and "appropriate procedure." Please provide this information.
7. Sec. 2.5, para. 1: The quality assurance/quality control expected of the "Pacific Northwest National Laboratory (PNNL) or other laboratory for those analyses which 222S Laboratory does not have capability," was not described in this document. Please identify if those alternative laboratories were used for any analytical work. Also, note that Ecology has not reviewed the 222S Laboratory QAPP; therefore, it is not possible to determine if the quality assurance/quality control was acceptable.

8. Sec. 2.5, para. 2: Ecology considers this description of the laboratory data deliverables in the written report to be incomplete. Note that Table 2 appears incomplete, or at least ambiguous, because the columns have been left blank for a number of the parameters listed. Item 1 does not indicate that **method** detection limits were to be provided. A complete data package needs to be made available for Ecology's review, including all quality control sample results (including results for duplicate samples, spikes samples, initial calibration, continuing calibration verification, method detection limits, and method blank sample[s]), bench sheets and instrument printouts (in addition to item 4), and the chain-of-custody documentation.

9. Sec. 2.6: The description/direction for cleaning the sampling kits has not been provided. Please provide this information.

10. Sec. 3.2: The text does not explain why "The Resource Conservation and Recovery Act (RCRA) sampling holding times and preservation procedures are not mandatory to the aqueous sampling." An acceptable rationale is needed for evaluation of this assertion.

11. Sec. 3.6: For non-organic parameters, Ecology would have preferred to have the original sample run in duplicate rather than what was described here. Note also that spiking the laboratory control standard (which is insufficiently described) is of limited usefulness in that it does not evaluate recovery of the analyte in the sample matrix.

12. Sec. 3.7: The text does not describe or reference "CSSO procedures."

13. Sec. 3.8: Contrary to the text, the Request for Special Analysis (RSA) and sampling handling logbook are not acceptable chain-of-custody documentation. Ecology views the chain of custody as the primary way of tracking samples. More discussion regarding the RSA and the sampling handling logbook will be required. Ecology needs to know what information can be found within these two documents.

14. Sec. 4.3: The text should read, "Storing the waste in two similar tanks because of volume limitations," **are not expected to** "cause the characteristics of the wasted (sic) stored in one tank to differ from that in the other tank."

15. Sec. 4.4, para. 1: Note the General Comment above about the lack of Ecology participation. The text fails to list waste designation according to Washington State regulations as a requirement for parameter selection.

16. Sec. 4.4, para. 2: The text fails to explain why "SW-846 extraction procedures are not directly applicable to the organic sample," and why "The most essential data are the radiological parameters." The text fails to define to whom "Preliminary data will be provided as available if requested." Please provide to whom such requests should be made.

The following requirement belongs in Sec. 2.5 where the content of the data deliverables is defined: "The data package shall include an estimated mass balance and a discussion of the mass balance."

17. Sec. 4.5: The referenced document (SD WM LB-009) has not been approved by Ecology, or discussed with Ecology, for use on B Plant samples. However, with the exception of Sec. 4.5.4, the actions described in the associated subsections are acceptable.

18. Sec. 4.5.4: Rather than state "This is a violation of the chain of custody protocol," it is more appropriate that the procedure inherent when using a shielded container (i.e., that the sample bottle cannot be inspected during the transfer between B Plant and the laboratory) be described as a **deviation** from the chain-of-custody protocol. Note that this sampling and analysis plan is an appropriate vehicle for obtaining approval for such a deviation.

Ecology recommends the chain-of-custody requirements document be revised to reflect this needed deviation when shielded containers must be used.

19. Sec. 4.5.6: After mentioning that test portions may be reduced in size because of ALARA concerns, the text states: ". . . the resulting detection limit must be sufficiently lower than the action level specified in Table 2 to meet waste acceptance criteria." Unfortunately, the document does not specify what "sufficiently lower" is, so this requirement was not defined and there was no way for the laboratory to evaluate if the reduced test portion size would result in useable or rejected data. Who is responsible for doing this evaluation?

20. Sec. 4.8: See comment above for Sec. 3.6.

21. Sec. 4.9: The text does not describe or reference "CSSO procedures."

22. Sec. 5.0: The text does not describe or provide a reference for "appropriate health and safety requirements." The reviewer agrees radioactive contamination is a major concern. However, the hazardous constituents and the precautions for handling liquid samples (e.g., use of secondary containment) also are major concerns that need to be considered.