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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

December 5, 1994

Mr. Mathew P. Johansen
U.S. Department of Energy
P.O. 550, MSIN: A5-19
Richland, WA 99353

Dear Mr. Johansen:

Re: Comments on the Hanford Site Wide Groundwater Remediation Strategy 38266

The Washington State Department of Ecology has completed its review of the Hanford Site Wide Groundwater Remediation Strategy. The review comments indicate further clarification of certain areas is required. Also recommended is the need for additional technical information. Our comments are formally attached.

If you have any questions or concerns, please call me at (509) 736-3015.

Sincerely,

Dib Goswami, Ph.D
Unit Manager
Nuclear Waste Program

DG:mf
Enclosure

cc: Doug Hilderbrand, USDOE
Dennis Faulk, EPA
Administrative Record -Groundwater Strategy

GENERAL COMMENTS

Overall, this document contains the information required by TPA milestone M-13-81. However, more details are required in several sections to clarify the overall remediation strategy. The following general comments are made pertinent to the document and need to be incorporated in the revised version.

A. The executive summary must emphasize the current status of remedial action. The same should be explained in detail in the text under a separate chapter/heading, such as **"Present Status on the Remediation Activity."** The executive summary should mention the initial remediation effort/strategy and the final remediation effort/strategy, as described in Chapter 5.

The text on the present status of the remediation activities should include a detailed description of the five pump and treat pilot scale studies/remediation, future plan, and the results obtained, if any. The groundwater contamination in the 1100 Area should be explained briefly and the associated ROD on remediation needs to be explained. Also incorporate the information on the planned remediation activities for the N-Area.

B. Chapter 3.3 needs to be expanded to cover our concept of "prioritization." The public would like to know what is more/most important from remediation point of view, what should be done first, and why.

C. The general text should give more detailed information on 1100 Area and 300 Area groundwater contamination. The description on the groundwater quality of the 300 Area should be expanded, and the recommendations of the future site uses group need to be emphasized.

D. Include a subsection within Chapter 4.0 to describe the contaminant migration of major contaminants present in different areas. This should include information such as absorption, retardation, solubility, etc. This is important specially for those contaminants where containment of plumes are planned (e.g., in 200 Area). Also discuss how the fast and slow travel times may effect the plumes and remediation. Any identified preferential pathway(s) should be discussed briefly.

E. Emphasize the decision made on issues, such as injection of treated water back into the aquifer as an effective cleanup strategy, bias for action, etc.

F. Provide a list of ACRONYMS at the beginning of the document.

G. There should be a short discussion in Chapter 1 to show how this strategy fits into the Groundwater Protection Plan.

SPECIFIC COMMENTS

1. **Page iv, first sentence**

Modify the sentence as . . . major plumes found in the reactor areas and entering the Columbia River . . . Central plateau.

2. **Section 2.3, page 2-5, last paragraph, first sentence**

Appropriate cleanup options are made both by EPA and Ecology. Modify the sentence to reflect this addition.

3.. **Section 2.5.3, page 2-8, last paragraph**

Some of the measures to handle tritium contamination from the effluent are to discharge it through the soil column, spread on the soil surface far from the away from the presently contaminated area, increase the travel time towards the river, etc. The text should reflect some of these alternatives.

4. **Section 2.6, page 2-8, first bullet**

Incorporate more information on the decision to inject contaminated water into the contaminated plume in various pump and treat operations throughout the NPL Sites. Also, stakeholders' (e.g., HAB) support on the issue.

5. **Section 3.1, page 3-1 to 3-2**

Include the stakeholders' views on the reinjection of the treated water into the contaminated aquifer.

6. **Section 3.3**

The prioritization aspect is not discussed here. This needs to be discussed briefly.

7. **Section 4.0**

Please see item c under General Comments.

8. **Section 4.2, page 4-11**

Other NPL Sites, such as 300 and 1100 Areas, are also to be explained.

If possible, sources of all the contamination plumes should be given in one or two sentences. This can be provided in section 4.2.2, in the description of the individual contamination plume.

9. **Section 5.0**

This chapter is in fact the most important chapter of the entire document. The chapter should include our concept of prioritization. The public would like to know what is more/most important and what should be done first and why. A clear message on these aspects needs to be provided in the document.

At the end of this chapter, a sub-section should be added giving the present status of the remediation activities (please see item a under General Comments).

10. **Section 5.3.2, page 5-5**

The present pump and treat is successful in removing both uranium and technetium below nondetect or MCL. Modify the paragraph accordingly.

11. **Section 5.3.3, page 5-5**

Technology development for other radionuclides was not mentioned in the text. This paragraph does not describe what technologies are being considered for uranium and technetium. Ecology requests that the text be revised to clarify the possible options. Discussion as to what options should be included in the final text needs to occur among the three parties.

12. **Section 5.7.2, page 5-9, second paragraph**

Explain how better definition of the extent of the contamination at the D Reactor will be accomplished. Do you think the present available knowledge is not enough? Please explain.

13. **Section 5.11, page 5-11 to 5-1**

Some of the measures to handle tritium contamination from the effluent are to discharge it through the soil column, spread on the soil surface far from the presently contaminated area, increase the travel time towards the river, etc. Some of these methods can be stated in the text as the preferred alternative(s).