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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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September 17, 1996

Ms. Donna Wanek
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Dear Ms. Wanek:

Re: Comments on Limited Field Investigation for the 200-UP-1 Operable Unit

The Washington State Department of Ecology (Ecology) has completed its review of the Limited Field Investigation for the 200-UP-1 Operable Unit (DOE/RL-96-33 Draft A). Ecology finds the document inadequate to fill the scope of the subject. Our comments are enclosed. 44831

Scheduling a comment resolution meeting of the Tri-Parties would be appropriate to expedite the revised document.

If you have any questions, please contact me at (509) 736-5704.

Sincerely,

Shri Mohan
Nuclear Waste Program

SM:sb
Enclosure

cc: Paul Beaver, EPA
Mike Thompson, USDOE
Administrative Record: 200-UP-1



Washington State Department of Ecology
Comments on the
Limited Field Investigation for 200-UP-1 Operable Unit

General Comments:

1. This Limited Field Investigation (LFI) document is supposed to address all the LFI activities addressed in the 200-UP-1 Work Plan (see your comment in paragraph 2 of Executive Summary). It is not expected to delete any LFI completed, or planned for, uranium and technetium. Modify the statement and include all the relevant information as previously planned.
2. Give proper explanation and the appropriate references to support your comments on the migration of contaminants at depth below the unconfined aquifer. The report suggests that the contaminants found are due to migration through annular seals of wells (last paragraph of page ES-1 of Executive Summary). Describe your plan to resolve the problem of downward contaminant migration.
3. Many studies are under review on contaminant migration and flow path, which are based on modeling studies and field data. Some of the recent groundwater fate and transport modeling studies do not match with earlier assumptions and results. Isorisk contours will be different for the various studies. Ecology will provide comments at a later date, after review of all the modeling studies and the risk calculations.
4. The report does not describe the data used for the risk analysis. It should be clarified if the minimum, average, or maximum values were used. The risk calculations should be conservative by using the maximum values obtained during the last three to four years.
5. Ecology needs more information on the various assumptions made in the risk analysis. These assumptions include future conditions, travel time of the 26 contaminants, various parameters in the groundwater fate, and transport modeling, etc. Chapters four and five are based on these assumptions and need more discussion. The report should consider the evaluations of the various related studies. Vadose zone contamination should be discussed in the risk analysis. Ecology can provide comments only after considering presentation of the data.
6. The report presents a summary of 26 high priority groundwater contaminants. Detailed historical data has not been presented. Tables in the report present only minimum, average, and maximum values. This is important information; however, it is very difficult to comprehend the data presented in the report. The historical data should be presented in graph form for all the 26 contaminants of concern.
7. Chapter 3.4.2 describes various contaminants. The report should provide figures showing concentrations at each location and the chemical contour for all 26 contaminants. Maximum Contaminant Level (MCL) labels and values should be marked.

8. The report should be presented in a more readable form with proper figures for easy interpretation and understanding . In order to achieve this, there should be figures for each contaminant (whether above MCL or not) with MCL values identified in each figure.
9. The document lacks information on the gross alfa and gross beta. The work plan and the subsequent Sampling Analysis Plan identified the need of such analysis in the 200-UP-1 Operable Unit.

Specific Comments:

1. Chapter 2.1.3, page 2-3

This sub-section should include a brief summary of events outlined in the various bore-hole summary reports. Also include copies of the Nation Priorities List agreement/change control forms where major decisions are made, e.g., drilling of injection wells, their justification, etc.

2. Chapter 2.1.5

Wells used for the assessment of 200-UP-1 groundwater (e.g. Table 2-3) must be clarified with the water sampling depth, aquifer intercepted, screen length , etc.

3. Table 2-4

Clarify if the elevations indicated in the tables are with reference to Mean Sea Level (MSL) or some other reference point.

4. Section 2.1.5.3, page 2-5

Clarify if a certain percentage of the samples were analyzed using the Contract Laboratory Program method. A specific percentage of the samples were expected to use this method.

5. Page 2-6, Section 2.2, paragraph 2

Provide a summary of information and values on the slug and pumping test including information on well diameter, depth and screen length, aquifer type, number of tests, etc.

6. Page 2-7, Section 2.3, paragraph 2

Provide reference to the documentation showing which monitoring approach was changed from quarterly monitoring to the present status.

7. Figure 2-1

Lines connecting the various field activities, the specific data needs, and parameters need to be checked. For example, 'Groundwater: Common Ions, pH, Eh, ...' is connected to 'New Well Installation.' Perhaps the line should connect to 'Soil Sampling and Analysis for Physical and Chemical Properties,' since these are measured by sampling methods. The chart should be presented in a more readable format.

8. Table 2-1

Define the level of screen interval, if it is MSL or depth from the ground surface, etc.

9. Page 3-1, Section 3.1, paragraph 2 and 3

Observations and conclusions made in the referred documents have not been accepted by Ecology. The current findings and the earlier conclusions do not match with the cited documents. Therefore, the conclusions indicated in the paragraphs are not acceptable to Ecology.

10. Page 3-2, Section 3.1.2, paragraph 1

Be more specific. Also, provide information on the wells regarding the evidence on the contaminant transport through annulus seals, and the steps proposed to fix the problem (see General Comment 2).

11. Page 3-5, Section 3.3.2, paragraph 2, last line

The reference table should be Table 2-4 not Table 2-3.

12. Page 3-5, Section 3.3.2.3, last line

It has been indicated that as the overlying mound continues to dissipate, the potentiometric head of the confined aquifer will be greater than the unconfined aquifer, resulting in upward flow. Qualify the statement by providing information on the stability of potentiometric levels of the confined aquifer.

13. Page 3-6, Section 3.4.1, paragraph 2

Table presents summary of 26 high priority groundwater contaminants. This is very important information; however, it is very difficult to comprehend. It would be very beneficial if the data was also presented in graph form.

14. Page 3-13, Section 3.4.2.2.6, paragraph 2

The paragraph describes various facilities of Figure 1-2; however, these facilities are not drawn on the figure. Update the figure to reflect these facilities.

15. Page 3-20, Section 3.5.3, paragraph 1, last sentence

Can the conclusion regarding the leaching of metals from the plumbing and processing equipment be substantiated by providing data of the vadose zone? Detailed attention should be given to high levels of chromium in the groundwater. Is there evidence of high chromium in the areas in and around the leaky/unsealed wells to substantiate the remarks?

16. Figure 3-3

Water table is indicated as 193-274 feet below ground surface. Clarify if the low and high are the levels of lowest and highest water table elevations in the operable unit, or if this has been the fluctuation over a certain number of years. It is advised to note these levels in MSL also.

17. Page A-3

The text states there was sufficient data to estimate risk. Were the regulators involved in this determination? Was estimated data used (J qualifier)?

18. Page A-4

Page 2-6 of *Hanford Site Baseline Risk Assessment Methodology* (HSRAM) states that one half of the Sample Quantitation Limit will be used when a parameter is not detected for use as a surrogate value for calculating a tolerance limit. On page 3-4 of HSRAM, a risk or hazard quotient is calculated and then screened to eliminate contaminants of concern. Also, *Risk Assessment Guidance for Superfund* (RAGS) page 5-10, section 5.3.3 describes a similar way of evaluating data. Page 5-11 of RAGS states that when a chemical is not detected in any sample in a medium, it can be eliminated. Explain in more detail what was actually done in eliminating contaminants of potential concern.

19. Page A-5

Were all contaminants from the 200-UP-2 investigation considered and rejected based on Kd's, etc.?

20. Page A-6

Ecology would like a demonstration of the CONMIG Model (Walton, 1989).

21. Pages A-13, A-14

What is the logic and/or resource for assuming Hexavalent Chromium has a background value?