



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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February 10, 2010

Mr. Matthew S. McCormick, Assistant Manager  
Richland Operations Office  
United States Department of Energy  
PO Box 550, MSIN: A5-11  
Richland, Washington 99352

Re: Department of Ecology's (Ecology) Final Review Comments on the *Action Memorandum for Non-Time-Critical Removal Action for 37 Waste Sites in the 200-MG-1 Operable Unit*, DOE/RL-2009-86, Draft A

0084297

Dear Mr. McCormick:

Ecology's final review comments on the referenced document are enclosed. We collaborated with your staff on the review process to reduce repetitive comment resolution cycles.

If there are any questions, contact me at 509-372-7941 or Zelma Jackson at 509-372-7910.

Sincerely,

Nina M. Menard  
Environmental Restoration Project Manager  
Nuclear Waste Program

zj/aa  
Enclosure

cc w/enc:

Stuart Harris, CTUIR  
Gabriel Bohnee, NPT  
Russell Jim, YN  
Susan Leckband, HAB  
Ken Niles, ODOE

Administrative Record: 200 Area  
Environmental Portal  
Hanford Operating Record General File  
USDOE-RL Correspondence Control

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**REVIEW COMMENT RECORD (RCR)**

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<b>5. Document Number(s)/Title(s)</b>  Action Memorandum for Non-Time Critical Removal Action for 37 Waste Sites in the 200-MG-1 Operable Unit (DOE/RL-2009-86, Draft A)	<b>Project Manager Name</b>  Nina Menard	<b>Reviewer Name</b>  Ecology  <b>Review Task:</b> Chemistry, Regulatory Integration, Hydrogeology, Risk Assessment		
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<b>10. Agreement with indicated comment disposition(s)</b>			
_____ Organization Manager (Optional)	_____ Reviewer/Point of Contract	_____ Reviewer/Point of Contract	
_____ Date	_____ Author/Originator	_____ Date	_____ Author/Originator

Item	12. Page/Line	13a. Comment/Discrepancy (Provide technical and/or regulatory justification.)	13b. Recommended Change	14. (A)cccept or (R)eject	15. Disposition (Provide justification if <b>NOT</b> accepted.)	16. Status
1.	General Statement	<p>These documents: DOE/RL-2009-53, Revision 0 (Removal Action Work Plan for 11 Waste Sites in 200-MG-1 Operable Unit); DOE/RL-2009-60, Revision 0 (Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites); and DOE/RL-2009-86, Draft A do not infer by reference or state that the prominent surface feature throughout the 200-MG-1 OU is a vast clastic injection dike network.</p> <p>The features are expressed on the ground surface and within the targeted CS/NFA or RTD zone of 15 feet (4.6 m). It has been well documented that clastic dikes influence the vertical migration of contaminants in the vadose at Hanford. An understanding and acknowledgement of these features would enhance the objectives of this removal action by control of the source of</p>	Include language documenting clastic injection dikes in MG-1 and the impact to contaminate groundwater migration.			

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		groundwater contamination migration through the vadose zone.				
2.	Table B-2	Disagree with some of the values that are in the new table.	Set up a meeting to discuss the changes in the RALs.			
3.	Page 5-1 2 <sup>nd</sup> ¶	DOE/RL-96-17, Rev. 6, for Non-radiological contamination is incorrect. The values that are being used for the RAL are from the WAC 173-340 Revised 2007 not Revised 1996.	State WAC 173-340 Revision November 2007.			
4.	Page 5-2, 1 <sup>st</sup> bullet	Needs clarity	Add text that states Method B.			
5.	Page 5-2, 2 <sup>nd</sup> ¶	Replace the text that states, Based on the distance of the .....	The first step in achieving surface water protection will be through protecting the groundwater pathway. However, where surface water protection standards (including standards described in WAC 173-340-730) are more stringent than the groundwater standards, protection of the Columbia River will be achieved by meeting the surface water standards at either a standard or conditional point of compliance for groundwater, as defined in WAC 173-340-720(8). It is anticipated that current uses of the Columbia River will continue in the future.			
6.	Page B-1 1 <sup>st</sup> ¶	This paragraph is confusing and inconsistent with the previous 200-MG-1 Action Memo and the Table B-2.	Remove this paragraph.			
7.	Page B-1, section B1	After the first sentence, it would be a beneficial to explain that the analytical methods that will be used to achieve the removal action levels have already been approved by	Include language similar to what has been suggested.			

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		Ecology in the Sampling and Analysis for Selected 200-MG-1 Waste Sites (DOE/RL-2009-60). State that this SAP was for the first 11 waste sites, and that the only additional COPCs for the 37 waste sites in this Removal Action are technetium-99, tritium, thallium, and xylene.				
8.	Page B-2, Table B-1, Technetium -99 and Tritium	It has been properly noted that technetium-99 and tritium are additional COPCs that were not included in the Action Memorandum for Non-Time Critical Removal Action for 11 Waste Sits in 200-MG-1 Operable Unit (DOE/RL-2009-48). This indicates that these radioactive COPCs were not included in the applicable SAP (DOE/RL-2009-60). Therefore, analytical methods for these radionuclides have not been discussed or approved by Ecology. Please identify the analytical methods that will be used for technetium-99 and tritium.	Provide the applicable analytical methods that will be used for technetium-99 and tritium.			
9.	Page B-3, Table B-2, Arsenic, Required Detection Limit	The Required Detection Limit for Arsenic is listed as 1.0 mg/kg. DOE/RL-2009-48 lists the RDL as being 10 mg/kg. Has the RDL actually decreased to 1.0 mg/kg or is this an error?	Ensure that the listed RDL of 1.0 mg/kg is accurate, and if it is please insert a note explaining the change. If 10 mg/kg is still the correct value, edit the table as such.			
10.	Page B-3, Table B-2, Chromium (VI), Required Detection Limit	The Required Detection Limit for Cr (VI) is listed as 0.3 mg/kg. DOE/RL-2009-48 lists the RDL as being 0.5 mg/kg. Has the RDL actually decreased to 0.3 mg/kg or is this an error?	Ensure that the listed RDL of 0.3 mg/kg is accurate, and if it is please insert a note explaining the change. If 0.5 mg/kg is still the correct value, edit the table as such.			
11.	Page B-3, Table B-2, Thallium	Thallium has been included as a potential contaminant of concern for the 37 waste sites, but was not included for the first 11 waste sites in DOE/RL-2009-48. Provide a note that explains the addition of thallium, similar to what was completed for the addition of xylene. Fortunately, the SAP	Within the Note, list the waste site that has caused thallium to be COPC.			

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		associated with the 11 waste sites identifies that EPA method 6010/200.8 will be used to analyze thallium, so this additional information is not necessary.				
12.	Page B-4 and B-5	RALs for TPH-diesel and TPH-kerosene are not using the most stringent value. From footnote d, Ecology can conclude that DOE is willing to take the risk that additional clean up may be necessary at the final remedy.	No action.			
13.	Page B-4, Note;	It is unclear from these statements why carbon tetrachloride and nitrate were removed.	Clarify the text to indicate that the only waste site to have received carbon tetrachloride is 600-275 and nitrate was waste site 600-262 and that these wastes were located in 200-MG-1 (11 sites Action Memo).			
14.	Page B-4, Table B-2, Note, first bullet	<p>The bullet states the following:</p> <ul style="list-style-type: none"> <li>Removal of carbon tetrachloride (added due to process knowledge for waste site 600-275).</li> </ul> <p>The basis for carbon tetrachloride not being listed in this document for the 37 waste sites should be made explicitly clear. It is confusing, and has multiple interpretations. The following is an example of how clarity can be achieved</p> <ul style="list-style-type: none"> <li>Carbon tetrachloride was included in DOE/RL-2009-48 for the first 11 200-MG-1 waste sites as a result of the process knowledge information for waste site 600-275. Carbon tetrachloride is not a potential contaminant of concern for any of the 37 waste sites in this Removal Action, and therefore will not be characterized.</li> </ul>	Edit the Note for carbon tetrachloride as suggested.			
15.	Page B-4, Table B-2, Note,	<p>The bullet states the following:</p> <ul style="list-style-type: none"> <li>Removal of nitrate (as nitrogen) (added due to process knowledge for waste site 600-262).</li> </ul>	Edit the Note for nitrate (as nitrogen) as suggested.			

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	second bullet	<p>The basis for nitrate (as nitrogen) not being listed in this document for the 37 waste sites should be made explicitly clear. It is confusing, and has multiple interpretations. The following is an example of how clarity can be achieved</p> <ul style="list-style-type: none"> <li>Nitrate (as nitrogen) was included in DOE/RL-2009-48 for the first 11 200-MG-1 waste sites as a result of the process knowledge information for waste site 600-262. Nitrate (as nitrogen) is not a potential contaminant of concern for any of the 37 waste sites in this Removal Action, and therefore will not be characterized.</li> </ul>				
16.	Page B-4, Table B-2, Note, third bullet	<p>The bullet states the following:</p> <ul style="list-style-type: none"> <li>Addition of xylene based on process knowledge for 200-W-3 Dumping Area</li> </ul> <p>The basis for xylene being listed in this document for the 37 waste sites could be stated more clearly. The following is an example of how this can be achieved</p> <ul style="list-style-type: none"> <li>Xylene was not included in DOE/RL-2009-48 for the first 11 200-MG-1 waste sites. It has been added as a potential contaminant of concern for the 37 waste sites based on process knowledge for 200-W-3 Dumping Area.</li> </ul>	Edit the Note for xylene as suggested.			
17.	Page B-4, Table B-2, Xylene	Xylene was not included as a COPC in the applicable SAP (DOE/RL-2009-60). Therefore, the analytical method for it has not been discussed or approved by Ecology. Please identify the analytical method that will be used to achieve the removal action levels for xylene.	Provide the applicable analytical method that will be used for xylene.			
18.	Page C-11	Asbestos ARAR is not in this table.	Clarify why the Asbestos ARAR was removed.			

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19.	Page C-13	CERCLA ARAR and WAC citations are not in the same format. If the intent is that this citations are appropriate ARARs for the site	If the intent is that this citations are appropriate ARARs for the site, then reformat for consistency. If not, then explain the intent.			