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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

17-AMRP-0057

DEC 14 2016

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Smith:

INTERIM STATUS GROUNDWATER MONITORING PLAN FOR THE 216-A-36B PUREX PLANT CRIB, DOE/RL-2010-93, REVISION 2

This letter transmits the Interim Status Groundwater Monitoring Plan for the 216-A-36B PUREX Plant Crib, DOE/RL-2010-93, Revision 2 to the Washington State Department of Ecology (Ecology) for information. The Review Comment Record is also attached.

The U.S. Department of Energy Richland Operations Office, in collaboration with Ecology staff (Nina Menard, Dib Goswami, Jeff Ayres, Dwayne Crumpler, Joe Caggiano, and Zelma Jackson), developed this Interim Status Groundwater Monitoring Plan.

If you have any questions, please contact me, or your staff may contact, Mike Cline, of my staff, on (509) 376-6070.

Sincerely,

Ray J. Corey, Assistant Manager
for the River and Plateau

AMRP:RDH

Attachments - 1241906

cc: See page 2

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EDMC

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cc w/attachs:
J. M. Ayres, Ecology
G. Bohnee, NPT
R. Buck, Wanapum
J. A. Caggiano, Ecology
J. D. Crumpler, Ecology
D. Goswami, Ecology
D. A. Faulk, EPA
S. Hudson, HAB
Z. M. Jackson, Ecology
R. Jim, YN
J. J. Lyon, Ecology
N. M. Menard, Ecology
K. Niles, ODOE
D. Rowland, YN
R. Skeen, CTUIR
Administrative Record
Environmental Portal

cc w/o attachs:
J. V. Borghese, CHPRC
M. H. Doornbos, CHPRC
W. R. Faught, CHPRC
C. P. Noonan, MSA
R. E. Piippo, MSA
M. J. Turner, MSA

REVIEW COMMENT RECORD (RCR)

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02/09/2016	
3. Project No. 216-A-36B	Page 1 of 48

5. Document Number(s)/Title(s)	Project Name:	Reviewer Names:	8. Organization/Group	9. Location/Phone
Interim Status Groundwater Monitoring Plan for the 216-A-36B PUREX Plant Crib, DOE/RL-2010-93, Draft Rev. 2	Nuclear Waste Program	Tim Mullin		(509) 372-7970

	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date / Organization Manager (optional) (print and sign)	Date / Reviewer/Point of Contact (print and sign) / Author/Originator (print and sign)	Date / Reviewer/Point of Contact (print and sign) / Author/Originator (print and sign)

Item	12. Page/ Line	13a. Comment/Discrepancy (Provide technical and/or regulatory justification)	13b. Recommended Change	14. Accept or Reject	15. Disposition (Provide justification if **NOT** accepted)	16. Ecology Response and Comment Status
General	P: 1-1 S: 1 L: 1	Executive summary should be updated after document is revised to ensure it matches main text.	Update executive summary after main text revisions are complete.	Accept	Executive summary will be updated as needed.	Accept and closed
1	P: 1-1 S: 1 L: 15	216-A-36B is not currently regulated as a landfill. No approved closure and postclosure plans exist to close this unit. Landfill closure has not been approved by Ecology as part of final status permitting of unit.	Delete "regulated as a landfill"	Accept	Text revised per comment.	DOE/RL-2005-90, Rev. 0 argues for clean closure of this unit, and LDR requirements are not detailed. A contingent landfill closure plan has not been provided to Ecology. Thus, there are two contradictory pieces of information. Ecology has not approved any closure plan for this unit. Does USDOE intend to close the unit as a landfill? If no commitment is to be made at this time, delete the text. See USDOE response to comment #3. Closed with modification
~~2~~	~~P: 1-1~~ ~~S: 1~~ ~~L: 17~~	~~Unit Part A Form is currently included in the *Draft Hanford Facility Dangerous Waste Permit (Site-Wide Permit), Revision 9* - WA7890008967~~	~~See comment~~		Removed from comments per 2/11/16 message from ECY.	

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		~~Revise citation to conform to format on Ecology internet~~				
3	P: 1-1 S: 1 L: 19-20	Provide when "closure will be coordinated with the CERCLA as part of the 200-EA-1 Operable Unit." Or delete the discussion of closure activities.	A schedule is required by WAC 173-303-610 for closure activities at the TSD unit.	Accept	As agreed with Ecology at the April 19, 2016 meeting, discussion of future unit closure and reference to current/recent closure plan(s) will be removed from the document. Information from early closure plans (prior to 2005) may be used and referenced as needed for supporting/historical information of the unit.	Accept and closed with this modification
4	P: 1-1 S: 1 L: 23	The revised closure plan submitted to Ecology in 2014 met the intent of TPA milestone M-037-02 but did not appear to be a permit modification application. Clarify if the closure plan submittal was a Class 3 permit modification submittal to Ecology.	See comment	Accept with Modification	See response to comment 3. The sentence will be deleted.	Accept and closed with this modification
5	P: 1-1 S: 1 L: 31-32	Provide more information on the "interim stabilization measures". Provide why interim stabilization measures were needed and what they were.	See comment	Accept with Modification	Additional reserach was performed but no further information on interim stabilization measures was found. Sentence modified to read "Discharges ceased on September 6, 1987."	Does not answer comment. Response not acceptable. Closed with modification
6	P: 1-1 S: 1 L: 35	Add "under interim status" at the end of the sentence	See comment	Accept	Change made per comment	Accept and closed with this modification
7	P: 1-1 S: 1 L: 36	Statement "This monitoring plan is the principal controlling document for conducting groundwater monitoring at the 216-A-29 Ditch" is accurate if considered at this time. However, this groundwater monitoring plan and unit should	"Currently, this monitoring plan is the principal controlling document for	Not Accepted	It is universally known and accepted that this interim status indicator parameter evaluation program groundwater monitoring plan	Disagree with some of these statements. However, for the purposes of expediency associated with this

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		be in final status, and the groundwater monitoring plan that goes into the Permit will be the principal controlling document. Add "Currently" Unit is no longer operating and should be thought of as progressing to final status.	conducting groundwater monitoring at the 216-A-36B Crib."		is for now, not forever. When a GW monitoring plan is required for a different type of monitoring program (e.g., GW quality assessment program) or for closure/post-closure, a new GW monitoring plan appropriate for use under the new GW monitoring program or during closure/post-closure will be prepared.	document, no change to text. Closed
8	P: 1-1 S: 1 L: 40-41	Provide why "triennial sampling for volatile organic compound chlorinated hydrocarbons" is required. 40 CFR 265 Subpart F does not require this monitoring, more information is needed to explain why VOCs are being sampled and analyzed.	See comment	Accept	Will provide additional details regarding the basis for VOC monitoring in Section 2.5. Triennial sampling for volatile organic compound chlorinated hydrocarbons is not required by 40 CFR 265 Subpart F. Will change text in Chapter 1 (p. 1-1, line 38-41) to read "The indicator evaluation program detailed in this plan requires semiannual sampling for parameters used as indicators of groundwater contamination, and annual sampling for parameters establishing groundwater quality.~~, and~~ Volatile organic compounds (VOCs) have historically been intermittantly detected at low concentrations in wells both upgradient and downgraident of the 216-A-36B Crib. Triennial sampling will be performed for site-specific constituents	Comment response does not provide the reason for triennial sampling of volatile compounds. Never answered comment. Delete first sentence of response. In addition, monitoring of the "site-specific consistiuents are required for metals and anions. The metals to be monitoried are iron, manganese, sodium, calcium, magnesium, and potassium. The anions to be monitoried include sulfate, nitrate, chloride, and bicarbonate/carbonate, which can be obtained with alkalinity measurements. These are proposed by the Permittee. All but magnesium, calcium, and bicarbonate are required by 40 CFR 265.92(b)(2). Please answer the comment

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					(including VOCs) at the upgradient and four downgradient network wells."	and delete this response entirely. Closed with modification
9	P: 1-1 S: 1 L: 41	Provide if wells 299-E17-1 and 299-E17-15 are new wells that require quarterly sampling based on 40 CFR 265.92	See comment	Accept with Modification	216-E17-1 and 299-E17-15 are exisiting wells that are added to this monitoring plan. These wells were last used for RCRA indicator parameter monitoring in 1997. Well 299-E17-1 was previously used for monitoring downgradient at the 216-A-10 Crib. Well 299-E17-15 had previously been used for monitoring downgradient of the 216-A-36B Crib. The information on previous use of these wells will be integrated into Section 3.2. Revised text to remove specific well callouts and state that 2 existing wells are added to the network. Wells are identified and described in Section 2, where figures showing locations are provided. The schedule for the first year of monitoring for these wells is already provided in the next sentence. The sampling discussion in Section 3.1 will be updated to clarify that the quarterly sampling for 299-E17-1 and 299-E17-15 is performed.	If you change the groundwater monitoring network, quarterly sampling would be required to establish initial background concentration or values per 40 CFR 265.92(c)(1). Closed with modification

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10	P: 1-1 S: 1 L:	Provide the need for the "revised groundwater monitoring plan." Nowhere in Section 1 does it provide the reason for the revision.	See comment	Accept	Will repeat information provided in the Executive Summary in Chapter 1 by adding "This revision was undertaken due to the age of the plan, and to ensure that the plan contains the most current Hanford groundwater monitoring information for the facility" after first sentence. A brief list of the primary, unit-specific changes (for example, changes to well network, changes to analytes, etc.) will be included in the sentence to tell reader the major changes.	Does not answer comment. Response not acceptable. Closed with modification
11	P: 1-2 S: 1 L: Figure 1-1	Because wells are called out in Section 1, a map with the monitoring well networks should be provided. As is, the reader has no idea where and why certain wells are being monitored.	See comment	Accept with Modification	Specific well callouts are removed from Chapter 1. Wells are now first discussed in Chapter 2 where figures are available.	Closed with this modification
12	P: 2-1 S: 2 L: 7	Technical editing is highly needed for this document. The reader has to go back 11 pages before they find Table 2-1 on p. 2-11, that is called out in Section 2 on p. 2-1 on line 7.	Move Table 2-1 forward top. 2-2.	Accept with Modification	Sentence will be changed to "The information contained in this chapter was obtained from several sources, including the Waste Information Data System (WIDS) general summary reports, previous groundwater monitoring plans listed in ~~Table 2-1~~ Section 2.5, and the following..." Technical editing was performed on the draft plan prior to being issued, as will be the final version.	Provide in response whether technical editing was done for the document. Depending on response, closed with modification. Closed with modification

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13	P: 2-1 S: 2 L: 8	Provide the actual date of the Closure Plan for 216-A-36B, DOE/RL-2005-90. On p. 1-1, line 22, it lists that it was submitted to Ecology in 2014, no date is provided here and the References (Section 6) gives the published date as 2006. Provide a clear timeline for preparation and submittal of the closure plan and the pertinent parts used out of the closure plan in this document.	See comment	Accept with Modification	See response to comment 3. References to this closure plan will be removed from the monitoring plan.	Closed with this modification
14	P: 2-1 S: 2 L: 8-14	Provide another paragraph that discusses the pertinent information obtained from each listed document in this groundwater monitoring plan.	See comment	Accept with Modification	As with other interim status plans, this list provides the documents used in drafting various sections of Chapter 2. The documents are cited in the text when they are used as a specific reference.	Provided why the bullets are needed based on the comment response. This layout was done for the final status units also. Delete the first phrase. Closed with modification
15	P: 2-1 S: 2.1 L:	Provide every constituent that was in the "ammonia scrubber waste effluent." Provide all waste streams that went to 216-A-36B over its entire history, both operating and non-operating.	See comment	Accept with Modification	Information on disposal to 216-A-36B, including disposal information from the Part A Permit, is provided in Section 2.3, Waste Characteristics. Additional details on disposal to the unit may be found in BHI-00178, Rev. 0, *PUREX Plant Aggregate Area Management Study Technical Baseline Report* (Section 4.10) and DOE/RL-92-19, Rev. 0, *200-E Groundwater Aggregate Area Management Study Report* (Sections 2.3.1, 2.8.2.6; Table 2-1). An estimated inventory of contaminants released to the soil during Hanford Site operations is available in RPP-26744, Rev. 0, *Hanford Soil*	None of these documents are listed or referenced – yet it must be where the primary information is obtained. Cite these primary documents when information is taken from them in the document and provide them as references in the reference section. Closed with modification

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					Inventory Model, Rev. 1 (Tables 6-29, 6-30, A5-21). The paragraph above will be added to Section 2.1 and the references will be added to plan.	
16	P: 2-1 S: 2.1 L: 20-21	What contamination is solely in the north crib? What demonstration and sampling data shows how the contamination in the north end was isolated from the south end?	See comment	Accept with Modification	A description of the 216-A-36A is already provided. Section 2.1 states: "The original 216-A-36 Crib received ammonia scrubber waste effluent from PUREX Plant operations beginning in September 1965. In March 1966, the northern segment of the 216-A-36 crib was removed from service because of the rapid buildup of fission products within the first 30 m (100 ft) of the crib from the routine effluent discharge. A vertical grout barrier was placed into the gravel layer of the crib 30 m (100 ft) from the north end of the crib to isolate the contaminated north end from the south end. The grout barrier subdivided the original crib into the northern segment (216-A-36A) and southern segment (216-A-36B)." Additional details on disposal to the 216-A-36A Crib may be found in BHI-00178, Rev. 0, *PUREX Plant Aggregate Area Management Study Technical*	Accepted with modification. Add references provided to Section 2.1 and Section 6, References. Confirm references are in the AR. Closed with modification

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					Baseline Report (Section 4.10) and DOE/RL-92-19, Rev. 0, *200-E Groundwater Aggregate Area Management Study Report* (Sections 2.3.1, 2.8.2.6; Table 2-1). An estimated inventory of contaminants released to the soil during Hanford Site operations is available in RPP-26744, Rev. 0, *Hanford Soil Inventory Model, Rev. 1* (Tables 6-29, 6-30, A5-21). This paragraph above will be added to Section 2.1 per comment 16 disposition.	
17	P: 2-1 S: 2.1 L: 31	Change "form" to "from" to read, "October 1972 when it was temporarily removed **from** service."	See comment	Accept	Change made per comment.	Closed per modification
18	P: 2-1 S: 2.1 L: 33-34	Provide what "surface stabilized" means or represents and the process that "stabilized" the facility. Provide why it needed to be "surface stabilized." Provide how placing 6 inches of clean gravel on the surface of the unit met the definition of "stabilization" as defined in WAC 173-303-040.	See comment	Accept with Modification	See response to comment 3. No additional information on the stabilization is available. Sentence deleted.	Provide why the sentence was deleted. This was not requested in the comment. Closed with modification
19	P: 2-2 S: L: Figure 2-1	Provide the groundwater monitoring wells on this map because this is a groundwater monitoring plan. 40 CFR 265.91	See comment	Accept with Modification	Figure 2-1 supports Section 2.1 (Facility Description and Operational History) and is intended to show the 216-A-36B and surrounding facilities. Existing Figure 2-8, which shows the location of monitoring wells discussed in Chapter 2 will be moved up to follow first callout of well 299-E17-9 in section 2.2.	**Conceptually agree.** Delete the first sentence, since this is Chapter 2, not Chapter 1. Delete first sentence since this is Chapter 2.

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						Closed with modification
20	P: 2-3 S: L: Figure 2-2	Provide more detail of this diagram in the text. Write the discussion while looking at the diagram. It is unclear what a lot of the information is on the diagram. Provide what "8" V.C.P. Gage well" means/represents. Provide at what depth the change in grade on the sideslopes occurs.	See comment	Accept	More detail in text provided. Figure changed to provide clearer information. Text explaining gauge wells added. Depth where side slopes change is better represented. Revised figure provided for review at comment resolution meeting.	**Conceptually agree.** Closed with modification
21	P:2-3 S: L:Figure 2-2	Provide which WIDS database document(s) is/are the crib diagram derived. Add document number(s) or reference/citation to figure. Completeness of information.	See comment	Accept with Modification	The drawings used for the figure are H-2-44501, Sht 26, Rev. 7 and H-2-59805, Sht 1, Rev. 6; these drawings were shared for review at the comment resolution meeting.	Accept. Closed with modification
22	P: 2-4 S: 2.2 L: 2-8	This paragraph is extremely confusing with the various dates. Explain how Ecology has regulation of mixed waste in August 1987, yet EPA authorized Ecology some 3 months later (November 1987). Rewrite this paragraph simply stating that Ecology has regulatory authority over mixed waste.	See comment	Accept	Text modified per disposition of 183-H comment 25. Text will be changed to: "~~In November 1987, the U.S. Environmental Protection Agency (EPA) authorized Ecology to regulate these hazardous waste components within the State of Washington (51 FR 24504, "EPA Clarification of Regulatory Authority Over Radioactive Mixed Waste"). In 1996, the Washington State Attorney General determined that the effective date for regulation of mixed waste in Washington State was August 19, 1987.~~The hazardous waste components	Delete 1st sentence of response. "At this time" would refer to when the decision was finalized and that would be September and December of 1996, some 9 years afterwards. This is not considered "made at the time." Delete the top part of the comment response. Closed with modification

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					of mixed waste were determined to be subject to Ecology authority to regulate these waste since August 19, 1987."	
23	P: 2-4 S: 2.2 L: 15-17	Dangerous Waste is regulated under the Hazardous Waste Management Act as implemented in WAC 173-303 regulations. It is not regulated under RCRA, as modified in 40 CFR 265 and WAC 173-303-400.	Rewrite sentence to read, "Dangerous waste is regulated under HWMA RCW 70.105 and its implementing requirements in the Washington State "Dangerous Waste Regulations (WAC 173- 303)."	Accept with Modification	Text modified per disposition of 183-H comment 26. Text will be changed to: "Dangerous waste is regulated under RCW 70.105, "Hazardous Waste Management" and its Washington State implementing regulations (WAC 173-303)."	Delete first sentence of response. Accept and close pending this modification Closed with modification
24	P: 2-4 S: 2.2 L: 18	The AEA gives DOE authority to regulate radionuclide materials at DOE facilities, not RCRA. RCRA excludes regulation of "source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended" as solid wastes per 40 CFR 261.4. Clarity of regulatory basis.	Revise sentence to "The AEA states that these radionuclide materials are regulated at DOE facilities . . ."	Accept	Text changed as recommended.	Accept per this modification. Closed pending modification to text
25	P: 2-4 S: 2.2 L: 45	Nitrate could be regulated as a dangerous waste if it is a degradation product of a listed dangerous waste or state only toxic waste (e.g., ammonia or ammonium nitrate), or characteristic waste. Ecology's authority to regulate dangerous wastes and toxic wastes under WAC 173-303.	Delete "is not a dangerous waste constituent"	Not accepted	The discussion in this section reports what was determined in 2010, and provided in DOE/RL-2010-93, Rev. 0 (Section 2.2), as the reason the unit was returned to detection monitoring. Will retain subject text as written because it is reporting what is stated in DOE/RL-2010-93, Rev. 0 (Section 2.2) as the reason why 216-A-36B	Substitute "is an indicator parameter that provides an indication of the presence of dangerous constituents in groundwater" for "is not a dangerous waste constituent"; Nitrate required under 40 CFR 265.92(b)(1), Appendix III. Continue sampling for nitrate. Closed with modification

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					returned to detection monitoring in 2010. **Will add "nitrate may indicate** the presence of dangerous constituents in groundwater" elsewhere in the document.	
26	P: 2-5 S: 2.4 L: 37	"grave-dominated" should be "gravel-dominated"	See comment	Accept	Change made per comment.	Accept pending modification to text Closed
27	P: 2-6 S: 2.4 L: 11-13	"This unit is an aquitard, creating confining conditions and isolating the Ringold Formation Unit E from the underlying Ringold Formation Unit A when all units are present." Is the Lower Mud Unit of the Ringold Formation an aquitard or an aquiclude? Is there any fracturing or local pinching out of the aquitard? What is the potential for communication between the uppermost unconfined aquifer and a confined aquifer? Understanding groundwater flow pathways.	Qualify or replace "isolating"; elaborate on potential for aquifer cross-communication	Accept	Aquitards are compacted layers of clay, silt or rock that retard water flow underground; they act as a barrier for groundwater. Aquitards separate aquifers and partially disconnect the flow of water underground. Aquitards limit and direct the flow of water which seeps down and replenishes aquifers. An aquiclude is a geological material through which zero flow occurs. However, it's usually difficult to distinguish aquitards from aquicludes. Partly because of the impracticality of taking measurements in such tight materials. The USGS prefers the term confining unit for these hydrogeologic terms. The sentence will be revised to **state "the Ringold Formation** lower mud is a confining unit acting as a barrier to groundwater flow between the	Comment accepted. Point out 216-B-3 example for importance of clarity of geology. Inconsistency between 2010 and 2015 B-3 Pond cross sections showing aquitards and aquicludes. Closed pending modification to text

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					Ringold Formation Unit E and the underlying Ringold Formation Unit A when all units are present."	
28	P: 2-6 S: 2.4.2 L: 30-31	Figure 2-12 depicts the uppermost aquifer. Clearly state what is the uppermost aquifer on page 2-6 in the 2.4.2 Hydrogeology section. WAC 173-303 requirement to regulate to releases to uppermost aquifer.	See comment	Accept	A sentence will be added to state "The uppermost aquifer underlying the 216-A-36B crib occurs within the Ringold Unit E and extends from the water table to the top of the lower mud unit."	Accept per this modification. Closed upon modification to text
29	P: 2-6 S: 2.4.2 L: 31-36	Provide if these hydraulic conductivities are based on a model or field measurements. As written, they are based on a numerical model. Provide if these are vertical or horizontal hydraulic conductivity values. Provide if the aquifer is in the Hanford formation.	See comment	Accept with Modification	The text will be revised to state: "Based on recent groundwater flow and transport modeling iterations for the 200-PO-1 OU, the calibrated average hydraulic conductivity for the Hanford formation and CCU, where channelized flow occurs, is estimated to be approximately 17,000 m/day (55,777 ft/day) and 2.27 m/day (7.45 ft/day) in those areas without channelized flow where older sediment occurs (DOE/RL-2009-85-ADD1, Draft A, Table 3-3 and CP-57037, Table 3-1). The average hydraulic conductivity for the Ringold Unit E is estimated to be 1 m/day (3.28 ft/day) (DOE/RL-2009-85-ADD1, Draft A, Table 3-3). Flow velocities in the uppermost aquifer below the 216-A-36B Crib have been estimated to range from 0.0013-0.22 m/d	The response appears to be a change. Change to accept or accept with modification. In addition, the information appears to be based on modeling and based on one data point measurement. Provide in more detail the basis for the 17,000 m/day (55,777 ft/day) value. If the aquifer is in the Ringold Unit E, then why are we discussing the Hanford formation as an aquifer. Closed with modification

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					(0.0004 – 0.73 ft/d) (Table B-1 in DOE/RL-2015-07, Rev 0)" Derivation of the hydraulic conductivities cited is provided in Table 3-3 of DOE/RL-2009-85-ADD1, Draft A and Table 3-1 of CP-57037. Information on hydraulic conductivities for geologic units in the 200 East Area are provided in Section 3.1 and Table 3.1 of PNNL-12261, Table 3-3 of DOE/RL-2009-85-ADD1, Draft A and Table 3-1 of CP-57037. The upper unconfined aquifer is in Ringold Unit E as indicated in response to comment 28,	
30	P: 2-6 S: 2.4.2 L: 35	17,000 m/day (55,777 ft/day) either the calculation is wrong or the units are wrong? Over 10 miles a day seems high Verify calculation and units used are correct	See comment	No Change Needed	As discussed in the referenced source CP-57037 in Section 3.1.3 "Aquifer test data have been organized into a database that is accessible using the Hanford Environmental Information System (HEIS). PNNL-14058, *Prototype Database and User's Guide of the Saturated Zone Hydraulic Properties for the Hanford Site* (Section 4.0), describes the original database. A commonly referenced synopsis of hydraulic properties is provided in Section 2.5 of PNL-10886, *Development of a Three Dimensional Groundwater Model of the Hanford Site Unconfined*	See response to previous comment. Closed

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					Aquifer System: FY 1995 Status Report. PNNL-13641, *Uncertainty Analysis Framework – Hanford Site-Wide Groundwater Flow and Transport Model*, presents another data review in Sections 4.2.2.2 - 4.2.2.6. These two sources have synthesized interpretations of experimental data." Table 3-3 of DOE/RL-2009-85-ADD1, Draft A and Table 3-1 in CP-57037 indicates the calibrated value for horizontal conductivity in the Hanford fm is 17,000 m/day in coarse-grained sediments.	
31	P: 2-6 S: 2.4.2 L: 37-40	Explain in more detail how high hydraulic conductivity influences hydraulic gradients. A flat water table does constitute "an extremely low hydraulic gradient." Provide this detail as it relates to the equation: Q=KIA. Provide if this statement is true.	See comment	Accept	Reference citations will be added following the sentence: "Due to high hydraulic conductivity, the water table in the area where the crib is located is very flat with an extremely low gradient (Section 2.2 in SGW-54165 Rev 0 and SGW-58828 Rev 0). This document provides additional data and discussion concerning the gradient in the 200 East Area. As discussed in section 2.2 of SGW-54165 and SGW 58828: "High-energy floodwater from Ice Age floods flowed through Gable Gap and into the central portion of the Hanford Site. The result was a paleochannel	Aquifer is in Rwie, not Hanford formation. In addition specific discharge is not constant. It changes in an unconfined aquifer. Based on comment 28, the discussion of the high hydraulic conductitvity is inappropriate. Delete discussion. Closed with modification

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					filled with highly permeable sediment of the Hanford formation, which forms an aquifer of high hydraulic conductivity (i.e., high transmissivity) in this region. The paleochannel corresponds to the region of low hydraulic gradient on the water table map. The reason for this can be seen by examining Darcy's law for groundwater flow (Fetter, 1988): $$\frac{Q}{A} = K \cdot i$$ where: Q = discharge (L^3/T) A = cross-sectional area (L^2) K = hydraulic conductivity (L/T) i = hydraulic gradient magnitude (L/L) T = time L = length The quantity Q/A is specific discharge, which is discharge per unit area. If specific discharge is constant, then an increase in hydraulic conductivity must be balanced by a decrease in hydraulic gradient, and vice versa. Thus, regions of high hydraulic conductivity are associated with low hydraulic gradients."	
32	P: 2-6 S: 2.4.2	Provide what formation or units the unconfined aquifer is located. Nowhere in this entire section or	See comment	Accept	See response to item 28. The information will be added.	Accept and closed with this modification

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	L: 40	Section 2.4 does it state which formation the unconfined aquifer is located.				
33	P: 2-8, Figure 2-4; p. 2-9, Figure 2-5; p. 2-10, Figure 2-6	Provide the supporting information for Ringold Unit A underlying 216-A-36B. As shown on these cross-sections, no well penetrates the Ringold Unit A under 216-A-36B Crib to support this unit. And the cross-section shows it pinching out underneath the unit.	See comment.	Accept	Additional text will be added to the last bullet in section 2.4.1 to explain generation of the cross-sections presented in this plan. Reference to ECF-HANFORD-13-0029, Rev. 1, 2015, *Development of the Hanford South Geologic Framework Model, Hanford Site, Washington* and DOE/RL-2015-07, 2015, *Hanford Site Groundwater Monitoring Report for 2014*, Rev. 0 will be included. The added text will state: "Geologic contacts shown below wells presented in the cross-sections are based on interpolated geologic contacts using the Leapfrog Hydro® geologic three-dimensional software (ECF-HANFORD-13-0029) and the cross-section generation tool provided in the web-based version of DOE/RL-2015-07. As indicated in each cross-section figure legend, geologic information associated with a well is projected to the cross-section within a buffer zone extending 75 m (246 ft) from either side of the cross-section line, resulting in approximate depths for stratigraphic contacts. Definition of the	Provide the closest actual contact of the Ringold A that is being used for the cross-section. Add ECF as a reference, if not already done so. Closed with modification

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					stratigraphic units present is based on the most current, integrated understanding of the subsurface geologic framework beneath an area and in some cases utilizes projected geologic contacts and stratigraphy from adjacent areas where data is available, utilizing the Leapfrog geologic three-dimensional software."	
34	P: 2-10 S: 2.4.3 L: Figure 2-6	Figure 2-6 shows 299-E-17-5 as an active well in the map legend, but as decommissioned in the cross-section. Reconcile this discrepancy. Revise map legend and cross-section symbology to depict decommissioned monitoring wells.	See comment.	No Change Needed	Three wells are identified as decommissioned on the cross-section: 299-E17-4, 299-17-5, and 299-E17-6 as indicated by an asterisk (*) symbol. The legend indicates an * identifies decommissioned wells. Decommissioned wells are only identified in the cross-section, not in the plan view Map Legend.	Accept and close
35	P: 2-11 S: 2.4.3 L: 2-3	Provide the citations for the pre-Hanford water level and the historical high groundwater level.	See comment	Accept	Reference citations will be added, including: BNWL-B-360 – *Selected Water Table Contour Maps and Well Hydrographs For the Hanford Reservation 1944-1974*, Figure 4; HW-51277 – *Changes in the Hanford Water Table 1944-1957*, Figure 1; HW-53599 – *Fluctuations of Hanford Water Levels*, Figure 3; DOE/RL-92-23 *(Hanford Site Groundwater Background)*, Figures 3-5 and 3-6; and DOE/RL-2011-01,	Close with modification

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					Rev. 0, Section 3.1, footnote #2.	
36	P: 2-11 S: 2.4.3 L: 5-7	Depict historical changes in flow direction with a rose diagram or diagrams.	See comment	Accept with Modification	Historical changes in the potentiometric surface and flow direction at the Hanford Site (including 200 East Area) will be provided as separate documentation. This document is being finalized (as an SWG) and will be issued as a public document in the coming months.	Accept, pending schedule submission of historical groundwater flow changes in standalone document as referenced. Closed
37	P: 2-11 S: 2.4.3 L: 20	Provide how the Columbia river, that is 5 miles away, affects 200 East Area flow directions.	See comment	Accept	Additional discussion concerning this impact is provided in the reference cited following the statement - SGW-54165. As discussed in SGW-54165 in Section 2.2: "One characteristic of highly transmissive aquifers is that stressors to the aquifer can have effects at large distances from the source of the stress. For example, the discharge of effluent to the ground at the Treated Effluent Disposal Facility (TEDF), located 3 km (1.9 mi) east of the 200 East Area, affects the water table elevation throughout the 200 East Area (PNNL 16346, Hanford Site Groundwater Monitoring for Fiscal Year 2006). Further, it had previously been hypothesized that large seasonal changes in	Comment response should be accept, or accept with modification. Clarify which document "Section 4.1.5.2" is being referenced. Provide what document "Appendix D" is being referenced. What "present study" is being referenced. The comment was never answered. Closed with modification

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					Columbia River stage also affect the water table elevation in the 200 East Area (PNNL 16346). Although the river is approximately 10 km (6.2 mi) from the 200 East Area, the highly transmissive paleochannel between the river and the 200 East Area allows for river-stage effects to be propagated large distances inland. This situation is described in more detail in Appendix D of SGW-54165. This hypothesis was confirmed by the results of the study, as described in Section 4.1.5.2 of SGW-54165." The discussion in quotations will be added to Section 2.4.3.	
38	P: 2-11 S: 2.5 L: 30	Provide why qualitative data was needed. Provide what purpose under the Order that required this monitoring.	See comment	No Change Needed	The reason that only qualitative data was collected at well 299-E17-6 is not discussed in the informal monitoring plan. Copies of the informal monitoring plan were provided for review at the comment resolution meeting. No change to the text.	Not accepted. Don't believe that this comment has been addressed. Order should be referenced. Closed
39	P: 2-12 S: 2.5 L: 8-9	Provide what happened to wells 299-E17-17 (upgradient well) and 299-E17-60) for monitoring wells in 1988 plan to the status in 1994 plan.	See comment	Accept with Modification	Text corrected for typo. "299-E17-60" should have been "299-E17-6". This well was identified for qualitative data use in the 1988 network. It is not specifically discussed in the 1994 plan. Well 299-E17-17 remained as an upgradient well in the 1994	Correction OK. Does not answer the comment for well 299-E17-6. Closed with modification

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					plan. Text modified to specifically state 299-E17-17 was retained. Additional information on well 299-E17-6 is provided here in RCR response: 299-E17-6 was constructed in 1965. Casing perforations from 300 – 460 ft below ground surface (bgs). Completion depth is 500 ft bgs. Plugged bottom casing at 494-498 ft bgs. Well is not WAC compliant. Well was utilized for CERCLA monitoring from 1982 -1995 and RCRA indicator parameter monitoring from 1987-1990. The well was decommissioned in 2005.	
40	P: 2-12 S: 2.5 L: 22-24	Provide what new upgradient wells and constituents were analyzed in the 2005 plan. This is needed to reflect the summary of changes that has occurred during interim status groundwater monitoring as required by 40 CFR 265 Subpart F and WAC 173-303-806.	See comment	Accept with Modification	Will change paragraph to read "The 1997 monitoring network was updated in 2005 (PNNL-11523, Rev. 1, Section 3.2) and specifically identified ~~included~~ wells 299-E17-14, 299-E17-16, and 299-E17-18 as downgradient from 216-A-36B. Upgradient wells were 299-E24-18 and 299-E25-31 for the three cribs. This plan also updated the constituents to be analyzed; chloride, iron, manganese, nitrate, sodium, sulfate."	Accept and closed with this modification.

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					A summary of GW monitoring activities as required by 40 CFR 265 Subpart F record keeping requirements is provided via the annual GW monitoring reports. WAC 173-303-806 is a final status permit requirement and does not apply to interim status GW monitoring plans.	
41	P: 2-11 S: 2.5 L: 22-24	Provide if 216-A-36B still is in groundwater assessment monitoring program under interim status requirements.	See comment	No Change Needed	As provided in Section 2.5, Table 2-1 and p. 2-12, lines 30-32, 216-A-36B resumed interim status indicator parameter monitoring in 2010 with DOE/RL-2010-93, Rev. 0.	Accept and closed
42	P: 2-12 S: 2.5 L: 34	Provide how well 299-E17-19 is the upgradient well when groundwater flow is to the east and the well is located to the northwest corner of the TSD unit.	See comment	Accept with Modification	The discussion presented in Section 2.5 is a summary of previous groundwater monitoring conducted at the 216-A-36B Crib. The historical configuration of the monitoring networks utilized with each of the previous plans are described. As noted in the sentence in question "The site-specific well network in DOE/RL-2010-93 (Rev. 0, Section 3.2) consisted of upgradient well 299-E17-19, which was positioned to detect potential groundwater contamination from the 216-A-10 Crib as a known upgradient source (Figure 2-8)." Well 299-E17-19 was defined as an	Provide why a 1st determination document was never done for 216-A-36B. Does not answer. The monitoring networks are not listed for each of the groundwater monitoring network changes. No upgradient wells are identified for 1997 plan. Monitoring network updated in 2005, but only identifies downgradient wells. It appears only one upgradient well exists in 2010, previously two existed (299-E24-18 and 299-E25-36). Still does not answer flow direction vs.

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					upgradient well in DOE/RL-2010-93 (Rev. 0, Section 3.2). At the time of preparation of this previous plan in June of 2011, because of the low gradient conditions, the groundwater flow direction was estimated to be east or southeast based on the movement of the large tritium and I-129 plumes. Will identify the upgradient wells in the 1997 network on p. 2-12, line 21 (note that the 1997 monitoring plan included 216-B-36B, 216-A-10, and 216-A-37-1): "There were two upgradient wells included in PNNL-11523 (Section 5.3.2). Well 299-E24-18 was selected as the upgradient well for groundwater flowing from the northwest toward 216-A-10 and 216-A-36B. Well 299-E25-31 was selected as the upgradient well for 216-A-37-1 and groundwater flowing from the northeast."	upgradient designation issue. Closed with modification
43	P: 2-12 S: 2.5 L: 37-38	Provide "the sampling frequency and constituent list for the first year of monitoring" in this document for completeness and as a part of the requirements under 40 CFR 265 Subpart F and WAC 173-303-806(4)(a)(xx)(A).	See comment	Accept with Modification	Revised text to read "In 2011, DOE/RL-2010-93 (Rev. 0, Section 3.1) was revised to include quarterly~~the~~ sampling of Well 299-E17-19 for pH, specific conductance , TOX and TOC ~~frequency and constituent list~~ for one ~~the first~~ year of monitoring. Well 299-	Well 299-E17-19 is not identified as well in the network until 2010 plan. It was not stated to be a upgradient well in WHC-SD-EN-AP-170 on p. 2-12. Inconsistent and inaccurate discussion of this well. Please rectify

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					E17-19 was an existing well in the well network, included in WHC-SD-EN-AP-170 (Section 3.3.3) and PNNL-11523 (Rev. 0 (Section 5.3.2) and Rev. 1 (Section 3.1). The well network in DOE/RL-2010-93 (Rev. 1) remained unchanged from that in DOE/RL-2010-93 (Rev. 0)." A summary of GW monitoring activities as required by 40 CFR 265 Subpart F record keeping requirements is provided via the annual GW monitoring reports. WAC 173-303-806 is a final status permit requirement and does not apply to interim status GW monitoring plans.	Closed with modification
44	P: 2-12 S: 2.5 L: 39-42	Nitrate is a dangerous waste constituent from the dangerous waste disposed in the PUREX cribs (ammonium nitrate). Between the breakdown of ammonium and nitrate itself, nitrate should be a major waste constituent found with this unit. It is required to be monitored as such.	See comment	Accept with Modification	No change to the text. Text is summarizing nitrate contamination in the 216-A-36B area from 1990 to recent results. Nitrate is monitored as a site specific contaminant at this unit. Per comment 25 response, will add "nitrate may indicate the presence of dangerous constituents in groundwater" elsewhere in the document.	**DISCUSS** Nitrate based on 40 CFR 265.92(b)(1)Appendix III. Closed with modification
45	P: 2-12 S: 2.5 L: 43	Remove the word "gradient" to read "downgradient network well 299-E17-14 shows the highest nitrate levels (Figure 2-8 and 2-9) ..."	See comment	Accept	Change made per comment.	Accept and closed with this modification
46	P: 2-13 S: 2.5	Provide what year this figure corresponds to groundwater flow directions.	See comment	Accept	The date of the water table elevations shown on the figure	Accept and closed

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	L: Figure 2-7				is indicated in the legend (i.e., 2013). The groundwater flow directions indicated on the figure are also for 2013. At the time of the initial drafting of this document, published information was available for 2013.	
47	P: 2-13 S: 2.5 L: Figure 2-7	"216-A-36B Waste Site" should be revised to "216-A-36B Dangerous Waste Management Unit or 216-A-36B Crib" in figure legend The definition under WAC 173-303-040 is for a dangerous waste management unit. "Waste Site" is not a defined term under WAC 173-303-040.	See comment	Accept with Modification	Agree to revise figures to appropriately identify TSD units. "TSD Unit" is the term that would be used (as defined here at Hanford in the TPA and the Hanford Facility RCRA Permit, Rev 8c). The term "TSD Unit", or the specific TSD unit's name, will be used to identify TSD units presented in figures.	Accepted and closed with this modification
48	P: 2-14 S: 2.5 L: Figure 2-8	Provide which way groundwater flowed during the missing years on the map (1995, 1996, 1998, 1999, 2000-2004, 2006-2009, and 2012-2015).	See comment	Accept with Modification	As indicated in the figure 2-8 title, the purpose of this graphic is to show the monitoring well networks associated with the previous 216-A-36B Crib monitoring plans. The flow direction dates on the figure correspond to the years when the monitoring plans identified on Table 2-1 were developed. Only those years associated with the previous plans are indicated. The text on page 2-11, Section 2.5, lines 23-24 will be revised to state: "Figure 2-8 shows the 216-A-36B Crib historical monitoring network wells and the wells	Closed with this modficiation

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					included in this revised groundwater monitoring network. Estimated groundwater flow directions corresponding to the dates of each plan are shown on Figure 2-8." The figure will be edited to indicate the direction of groundwater flow for the period 2013-2014. This more recent flow direction is based on water table elevation data derived from the low gradient monitoring well network and associated trend surface analysis.	
49	P: 2-15 S: 2.5 L: 22	Provide when well 299-E17-1 was added to the groundwater well network for 216-B-36B.	See comment	Accept	Added text that 299-E17-1 and 299-E17-19 are added in this plan and will have quarterly sampling for the first year.	Inconsistent with response to comment #43. Comment #49 does not appear to be answered. Provide if well 299-E17-1 was ever a part of the groundwater monitoring network at 216-A-36B. Closed with modification
50	P: 2-15 S: 2.5 L: 20-29	This paragraph is confusing. Provide if this is discussing this document or the previous Rev. 1. The author has changed from chronological discussion to one that represents constituents that were detected in the previous paragraphs and now it is unclear if it is representing the new plan or Rev. 1.	If Rev. 1 document, please clarify. If for Rev. 2, this should be in Chapter 3, Section 3.2 for wells, and Section 3.1 for constituents and sampling frequency.	Accept with Modification	A summary paragraph addressing the updated plan is included at the end of Section 2.5. To clarify, the first sentence is deleted and additional text added to the second sentence: Groundwater monitoring activities at the 216-A-36B Crib <u>under this groundwater monitoring plan (DOE/RL-2010-93, Rev. 2) currently</u>	Delete this information since it is directly discussed in Chapter 3. This is "Previous groundwater monitoring". Closed with modification

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					sample from a network of six wells…	
51	P: 2-16 S: 2.6 L: 1	Provide the "mobile constituents in the vadose zone" in this bullet. It is unclear what contaminant is being discussed for clarity.	See comment	Accept	The bullet will be revised to state: "As the mobile constituents in the vadose zone (e.g. nitrate) intercept and mix with groundwater in the unconfined aquifer, the constituents move laterally with groundwater flow"	Accept and closed with this modification.
52	P: 2-16 S: 2.6 L: 21-23	Figure 2-6 does not show the Hanford formation sitting on top of the Ringold Unit A. Figure 2-4 does show this relationship. Change the call-out from Figure 2-6 to Figure 2-4. Add "Ringold Unit E and the" before "Ringold lower mud unit" for completeness of what is missing stratigraphically.	See comment	Accept	The figure callout will be revised to Figure 2-4. The sentence will be revised to state: "This flood channel has removed the Ringlold Unit E and the Ringold lower mud unit, …."	How does this bullet directly relate to 216-A-36B from geologic and hydrogeologic perspective? Closed with modification
53	P: 2-16 S: 2.6 L: 27-31	The paleochannel or plumes are not provided on Figure 2-7 and makes the discussion difficult to follow. Provide a map that shows the paleochannels and plume map being discussed for better understanding of the conceptual model.	See comment	Accept	An additional new figure will be added to show the location of the paleochannel (large flood channel) that extends across the 200 East Area. The Figure 2-7 callout at the end of the bullet will be deleted and a reference to the Hanford Annual Groundwater Report will be added (DOE/RL-2015-07 Rev 0). The web-based annual groundwater report has an interactive plume display that shows the historical location and behavior of the tritium and iodine plumes as indicated in the bullet discussion.	**Conceptually agree.** A map will be needed for the Part B permit application submittal of the engineering report for the groundwater plan.

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					Acknowledged with regard to the final status plan.	
54	P: 2-20 S: 2.6 L: Figure 2-12	This figure does not show contaminant releases and migration stated in Section 2.6, p. 2-15, lines 39-41. Provide the release and migration to groundwater of the contaminants that have impacted groundwater at 216-A-36B.	See comment	Accept with Modification	The bulleted text provides assumptions used to develop the CSM. The CSM is a hypothetical model only; it does not state that groundwater impacts have occurred from the TSD unit. The figure title will be changed to: "General Representation of Hydrogeologic Characteristics Underlying the 216-A-36B Crib and Southeastern Portion of the 200 East Area". The text identified in the comment will be revised to state: "Groundwater flow and potential contaminant transport strongly influence the groundwater monitoring strategy. Therefore, having a ~~realistic~~ CSM of hydrogeologic and potential contaminant conditions is necessary for development of a practical groundwater monitoring plan. A groundwater CSM is an evolving hypothesis that identifies important features, actual and possible events, and processes that control groundwater and contaminant movement. This CSM ~~model~~	Accept and closed with this modification.

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					is based on the results of previous geological and hydrogeological studies, and groundwater monitoring results (PNNL-11523 [Rev. 1], PNNL-12261, DOE/RL-2009-85, and annual groundwater monitoring reports). ~~This section describes the 216-A-36B Crib CSM for potential contaminant transport to guide future groundwater monitoring. The CSM~~ The generalized hydrogeologic characteristics below the 216-A-36B Crib are shown in Figure 2-12. The CSM ~~describes the current understanding of the contaminant release and transport and~~ includes the following site characteristics and assumptions: • Liquid wastes are released in the crib, migrate through the vadose zone and into the groundwater. • As the mobile constituents in the vadose zone intercept~~ed~~ and mix~~ed~~ with groundwater in the unconfined aquifer, the constituents move~~d~~ laterally with groundwater flow. • A water table mound was created by discharges to the …0.07 to 0.15 m (0.2 to 0.5 ft) between 2010 and 2015.	

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					• Groundwater contamination, ~~if any,~~ tends to be higher in concentration near the water table, thus wells are most often screened (or casings perforated) near the water table (Conclusions and Recommendations in PNL-2724, *Vertical Contamination in the Unconfined Groundwater at the Hanford Site, Washington*)…."	
55	P: 2-20 S: 2.6 L: Figure 2-12	Figure should have a legend. Completeness of information.	Add legend for water table, etc.	Accept	A legend will be added to define the water table elevation symbols or will be annotated on the figure.	Accept and closed with this modification
56	P: 2-21 - 2-24 S: 2.7 L: Table 2-2	Missing the following citations: 40 CFR 265.90, 265.92(a), 265.93(a) and 265.93(c)(1), 265.94(a)(2)(iii) and Appendix IV. Add these citations to the table.	See comment	Accept with Modification	Added 40 CFR 265.90, 265.92(a), 265.93(a), and 265.94(a)(2)(iii). Corrected 40 CFR 265.94(a)(2)(ii) typos. Section 2.7 states "Regulatory requirements applicable to this groundwater monitoring plan are found in WAC 173-303-400(3) and 40 CFR 265.90, "Applicability," through 265.94, "Recordkeeping and Reporting," therefore, there are no missing citations. Table 2-2 is used to point out discrete locations within the GW monitoring plan where information may be found. 40 CFR 265.90(a) and (b), Applicability, will be referenced to Chapter 1. 40 CFR 265.93(c)(1) is a	40 CFR 265.90 should be covered under Chapter 1. 40 CFR 265.93(c)(1) is covered under Section 4.5, 2nd para. Should be Table 2-2. Closed with modification

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					reporting requirement and will be referenced to Section 4.5. Appendix IV is not listed on its own as it is embedded in 40 CFR 265.93(b).	
57	P: 2-24 S: 2.7 L: Table 2-3	Table 2-3 lists the Monitoring Objectives and the Site-Specific Constituent or Measurement. However, the table does not provide the analytical methods that will be employed to conduct the monitoring. For technical completeness, list the analytical method that will be used for each constituent or measurement that has been identified on the table.	For technical completeness, list the analytical method that will be used for each constituent or measurement that has been identified on the table.	Accept with Modification	See Table A-3 for analytical methods.	Accept and closed with this modification
58	P: 3-1 S: 3 L: 5	Provide why this plan "has been revised from that presented in the previous plan." Nowhere in this report does it explain why a change is needed from the existing groundwater monitoring plan.	See comment	Accept with Modification	Similar to comment #10 response, will provide a brief list of the primary, unit-specific changes (for example, changes to well network, flow direction, etc.) will be included in the sentence to tell reader the major changes.	Does not answer comment. Response not acceptable. Closed with modification
59	P: 3-1 S: 3 L: 7-12	This paragraph is not needed for this document. Delete this paragraph, because it is inaccurate and speculative.	See comment	Accept	See response to comment 3. The paragraph will be deleted.	Delete first part of response. Comment closed if Ecology proposed modification is made. Closed with modification
60	P: 3-1 S: 3.1 L: 14-28	Technical editing – Tables 3-1 and 3-2 should come before Figure 3-1 in the document.	See comment	Accept	Figure 3-1 will be placed after Tables 3-1 and 3-2.	Comment closed with modification.
61	P: 3-1 S: 3.1 L: 29-36	This paragraph does not provide a clear understanding how it applies to groundwater monitoring frequency and providing representative samples. Samples should be collected over a one week period to be representative of groundwater conditions. If a sample from one well is taken over a month apart from another well, it is not representative for statistical	See comment	Accept with Modification	Neither WAC 173-303-645 or Unified Guidance (EPA 530/R-09-007) specify a required window for sample collection within monitoring well networks. As described in subject text, wells are	This language was agreed upon between DOE (Doug Hilderbrand), CHPRC (Bill Faught) and Ecology (Dwayne Crumpler) at a meeting regarding representative sampling for

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		analysis or groundwater quality comparison. Provide clearly how missing a sampling event will be resolved in this paragraph to ensure representative sample collection and analysis. Please state, "If a sample from a monitoring well cannot be collected, the sampling event will start over until a collection of the entire groundwater monitoring network can be conducted."			scheduled for sampling by month and delayed sampling events are rescheduled as soon as possible. Sampling delays result from multiple factors including environmental (i.e., inclement weather) and access restrictions (i.e., heightened fire danger, area access restriction due to work by other Hanford contractors such as in the tank farms). In the event that a sampling delay has occurred and the representativeness of the samples is in question, DOE and ECY may agree to resampling wells. As discussed with ECY on March 16, 2016, CHPRC will change the pre-well sampling walkdown process. If it is observed that one or more network wells cannot be sampled during the walkdown, then sampling of the well network will not begin and management will be notified. Depending on the situation, the network sampling will be rescheduled within a short time frame (such as 3 to 4 weeks). In some cases, it may not be obvious that sampling cannot be performed until a well is accessed (e.g., an issue with a pump). DOE will	groundwater monitoring purposes related to CERCLA and RCRA authority with Greg Stinton of DOE. Please resolve accordingly. Closed with modification.

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					provide informal notification to Ecology if sampling of the network is expected to be delayed for longer than (4 weeks). Ecology may provide input in a timely fashion to DOE on how to proceed. Applicable portions of this comment response will be added to Section 3.1.	
62	P: 3-1 S: 3.2 L: 38-39	Provide which wells do not meet WAC 173-160. Some of these wells have been used in the past as monitoring wells that were upgradient from the facility like well 299-E17-5.	See comment	No Change Needed	Figure 2-8 shows wells used in the past for monitoring upgradient from the facility, including 299-E17-5. Whether a well identified for use in the current plan is compliant with WAC 173-60 is indicated on Table 3-1. Will add "(Table 3-1)" to the subject sentence: "Numerous groundwater wells exist in the vicinity of the 216-A-36B Crib. Not all wells meet WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells" (Table 3-1)."	Comment response should be WAC 173-160. The sentence states "Not all wells met WAC 173-160. Provide which wells these are at this location or provide a point to the section/table that does. Figure 2-8 does not indicate which wells are WAC compliant. Does not answer my comment Closed with modification
63	P: 3-1 S: 3.2 L: 41-43	List which wells in the area qualified for consideration and show the resolution of selecting the wells used in this plan.	See comment	Accept with Modification	Wells considered for use are shown on Figure 2-8. Wells selected for use were identified as providing representative groundwater constituent concentrations upgradient and downgradient of the crib, based on the current groundwater flow	Provide the response in the text of the document, because the criteria and choices of wells Figure 2-8 covers numerous wells that were downgradient and are now upgradient. Based on flow conditions. Provide a list of the wells in the down

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					direction. The basis for the well selection is discussed in Chapter 3. Will add the discussion to Section 3.2.	select for the ones chosen. Does not answer my comment. Closed with modification
64	P: 3-2 S: 3.2 L: 8-13	Provide why one upgradient well is "no longer considered suitable on its own for monitoring upgradient conditions." Provide why this is a concern/issue. The discussion does not answer this comment.	See comment	Accept	Additional text will be added: "An additional upgradient monitoring well is added as two upgradient wells are needed to monitor current spatial variability in upgradient constituent concentrations impacting the site (Figure 2-9). Justification for changes to the current plan from the previous monitoring plan are provided in Section 3.3 and shown on Table 3-4."	Accept and closed with modification
65	P: 3-4 S: 3.2 L:Table 3-1	Table 3-1 lists Filtered and Unfiltered parameters will be obtained for Iron, Manganese, Sodium, and Metals. A joint letter written by the Environmental Protection Agency (EPA) and the Department of Ecology directly addressed the use of filtered samples for groundwater monitoring well at the Hanford Site. Specifically, "...groundwater samples should not be field-filtered unless the turbidity exceeds 5 NTUs. Field-filtering under any circumstance must be specifically requested, with basis provided, and approved by Ecology or EPA in work plans." Provide the basis for the proposal to filter the groundwater samples for the Monitoring Well Network for the 216-A-36B Crib.	Provide the basis for the proposal to filter the groundwater samples for the Monitoring Well Network for the 216-A-36B Crib.	Accept with Modification	Joint letter from EPA/Ecology, dated August 7, 2007, states "It should also be noted that individual project managers may require duplicate filtered and unfiltered analyses in some situations." Unfiltered GW samples are used to satisfy Ecology requirements. Filtered GW samples are requested by the individual project manager in this situation. http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=DA05584485 The information below will be added to Table 3-1:	The technical basis for the need to collect filtered GW samples is not clear. The Disposition states that the unfiltered GW samples will be used to satisfy Ecology requirements. This warrants elaboration, since Ecology does not customarily support the use of field filtered GW samples. The Disposition also seems to state that filtered GW samples are also requested for this situation. Please state the explicit technical basis for the collection of filtered GW samples in this

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					Unfiltered samples will be collected in conjunction with filtered samples for select analysis to determine if metal constituents being monitored occur as both suspended and dissolved phases, or in only one state. The evaluation of suspended and dissolved metals provide supporting information for groundwater geochemical characteristics, as well as indication of well integrity such as the presence of dislodged well encrustation, well corrosion products, or failure of the well screen filter pack.	situation in order to obtain the approval of Ecology. Closed with modification
66	P: 3-5 S: 3.2 L:Table 3-1	Table 3-1, footnote b references Table A-3 to locate the Volatile Organic Compound (VOC) constituent list. Upon review of Table A-3, it shows constituents that are associated with SW-846 Method 8260B; but the table does not specify that the method is used to analyze VOCs. Due to this, for completeness include a reference to SW-846 Method 8260B within footnote b.	Include a reference of SW-846 Method 8260B within footnote b for reviewers that are not instinctively aware that this method is used to analyze volatile organic carbons.	Accept with Modification	Table 3-1 footnote "b" will be changed to "See Table 2-3 for volatile organic compound constituent list." See comment #56. The section in Appendix A where analytical methods are listed is identified in Section 2.7.	Accept and closed with this modification
67	P: 3-5 S: 3.2 L:Table 3-1	Table 3-1 lists Sulfate separately from the Anions listed in footnote e. Explain why sulfate analysis has not been included with fluoride, nitrate, and nitrite. They are all included within the same analytical method.	Explain why sulfate analysis has not been included with fluoride, nitrate, and nitrite.	No Change Needed	Sulfate is analyzed by the same method as fluoride, nitrate, and nitrite and is identified for analysis as a groundwater quality parameter. However, the footnote identifies the site-specific constituents within the category of anions. It is not intended to identify all the	Accept and closed

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					anions to be analyzed by a given method.	
68	P: 3-7 S: 3.2 L: Table 3-3	Explain why water table measurement date (gauging data) are not all from the same year. Should have 2015 water level data, or at a minimum 2014, water level data to present here as part of current groundwater monitoring plan sampling. Elevation of the ground-water surface at each monitoring well must be determined each time a sample is obtained per 40 CFR 265.92(e).	See comment	Accept	Groundwater elevation data available for each well, as of 2015, will be provided in Table 3-3. Groundwater data are produced routinely, updated data is available in the Annual Groundwater Report. The network in the plan is appropriate to the conditions at the time it was written. As data are evaluated, the plan will be updated as needed.	Accept and closed with this modification
69	P: 3-7 S: 3.2 L: Table 3-3	Provide the Northing for well 299-E17-18. The table provides only the Easting coordinates.	See comment	Accept	Will correct table	Accept and closed with modification
70	P: 3-8 S: 3.3 L: Table 3-4	Provide either here or in the text the need to sample and analyze for chlorinated hydrocarbons every three years. It is not clear in the document why this is being conducted.		Accept	Additional text will be added; "VOCs have historically been intermittently detected at concentrations near the method detection limits in wells both upgradient and downgradient of the 216-A-36B Crib (Figure 2-11)." Will also add, "Considering the current pattern of occurrence and detected concentrations, analysis for VOCs will continue on a triennial frequency to monitor the consistency of detections and trending of analytical results.	Provide why every 3 years vs. annually, then close with modification. Closed with modification
71	P: 3-8 S: 3.3 L: Table	Provide the list of wells in each column to show changes as is done with the other groundwater monitoring plans.	See comment	Accept	Added wells to the table.	Accept and closed with this modification

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	3-4					
72	P: 3-8 S: 3.3 L: Table 3-4	The background is supposed to use the student t-test based on Appendix IV of 40 CFR 265. Use the appropriate statistical method and cite this in this table.	See comment	Not Accepted	Calculation of the critical means for upgradient and downgradient wells is described in Section 4.2. The calculation is performed in accordance with EPA 530-R-09-007, as stated in 16-ESQ-0027, January 27, 2016 Letter from DOE to ECY, "*Response to Inspection Report Groundwater Operation and Maintenance Dangerous Waste Compliance Inspections on May 19, 20, 21, and 27, 2015, at the Hanford Site, Resource Conservation and Recovery Act (RCRA) Site ID: WA7890008967, Nuclear Waste Program (NWP) Compliance Index Nos. 15.521 thru 15.533 (15-NWP-174)*", p. 5, "Critical means and initial means values for every TSD network will be reviewed and evaluated every year. Recalculation of these values will be in accordance with the U.S. Environmental Protection Agency "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Unified Guidance," EPA 530/R-09-007, dated March 2009."	**DISCUSS** Does not meet regulations. Closed with change per comment 9.

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					Addressed with updated text to Section 4.2: The statistical evaluation utilized is consistent with requirements under WAC 173-303-645(8)(h) for final status TSD units.	
73	P: 4-1 S: 4.2 L:16	Insert "initial" between "upgradient" and "(background)"	See comment	Not Accepted	As described in Section 4.2, "The background statistical analysis is updated annually to establish comparative values for indicator parameters. A rolling mean is used because of changing upgradient concentrations and groundwater flow conditions." [modified template language] Annual review and evaluation of critical means is performed as stated in 16-ESQ-0027, January 27, 2016 Letter from DOE to ECY, "*Response to Inspection Report Groundwater Operation and Maintenance Dangerous Waste Compliance Inspections on May 19, 20, 21, and 27, 2015, at the Hanford Site, Resource Conservation and Recovery Act (RCRA) Site ID: WA7890008967, Nuclear Waste Program (NWP) Compliance Index Nos. 15.521 thru 15.533 (15-NWP-174)*", p. 5: "Critical means and initial means values for every TSD network will be reviewed and evaluated every year.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.

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					Recalculation of these values will be in accordance with the U.S. Environmental Protection Agency "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Unified Guidance," EPA 530/R-09-007, dated March 2009." The statistical evaluation utilized is consistent with requirements under WAC 173-303-645(8)(h) for final status TSD units.	
74	P: 4-1 S: 4.2 L:19	Insert "initial" in front of "background"	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
75	P: 4-1 S: 4.2 L: 23	Insert "initial" in front of "background"	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
76	P: 4-1 S: 4.2 L: 23	Rewrite the last part of the sentence to read, "...decreases, in the case of pH), over initial background (40 CFR 265.93[b]) concentration."	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
77	P: 4-1	Background statistical data is not allowed to be updated. It is set at the initial background	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance.

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	S: 4.2 L:25-26	concentration levels based on 40 CFR 265.92(c)(2) and 40 CFR 265.93(b). These initial background values do not change. Please place in this document the initial background values established for this unit. Provide if these values have been exceeded in the past				They do not recommend changes yearly. Closed with change per comment 9.
78	P: 4-1 S: 4.2 L: 26-27	This "rolling mean" is not allowed by the regulations nor does the rational for a "rolling mean" applicable. The "groundwater remedial actions currently being implemented" do not occur in 200 East Area that would affect groundwater quality. Delete this sentence and do not practice a "rolling mean."	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
79	P: 4-2 S: 4.5 L: 24-25	Change "statistical comparison value," to "relative to the initial background value, that information ..."	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
80	P: 4-2 S: 4.5 L: 30-33	Provide where the sentence, "In some instances, it is possible to determine immediately that the statistical finding is not the result of contamination from the facility. In that case, Ecology is notified, and a groundwater quality program is not instituted" is located in the regulations, either 40 CFR 265 or WAC 173-303. If not in regulations, delete this sentence.	See comment	Accept	Sentences deleted.	Accept and closed with this modification
81	P: 5-1 S: 5 L: 2-10	Based on various analytical results and exceedances, unit should be in a groundwater quality assessment program. Groundwater quality assessment under 40 CFR 265.93	See comment	Not Accepted	The only mechanism available within 40 CFR 265 Subpart F to activate groundwater quality assessment is the exceedance of indicator parameters. It would be helpful to know the specific regulatory callout driving change to a groundwater assessment program.	**DISCUSS** with comment #44. Closed

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					Nitrate will continue to be analyzed as a site specific constituent under indicator parameter monitoring.	
82	P: 5-1 S: 5 L: 3	Insert "initial" in front of "background" as stated in 40 CFR 265.93.	See comment	Not Accepted	See response to comment 73.	Not conducted according to EPA statistical guidance. They do not recommend changes yearly. Closed with change per comment 9.
83	P: 6-3 S: 6 L: 11	Link for PNNL-11523 document is not to Administrative Record (AR) location. Revise link, as document is in AR.	See comment	Accept	Link updated to AR website.	Accept and closed with this modification
84	P: A-6 S: A2.1.11 L: 10	In addition to the evaluation under the DOECAP and being State accredited, the text should also state that the laboratories must be evaluated under the Hanford Analytical Services Quality Assurance Requirements Document (HASQARD). The HASQARD serves as the quality basis for all sampling and field/laboratory analytical services provided to support the Hanford Site environmental clean-up mission. The HASQARD establishes quality requirements in response to DOE Order 414.1C or 414.1D, "Quality Assurance" (as applicable). The HASQARD satisfies the requirements from the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement [TPA]) Article XXXI and TPA Action Plan Sections 6.5 and 7.8.	Edit the text as follows: "The laboratories are evaluated under the DOE Consolidated Audit Program, the Hanford Analytical Services Requirements Document and must be accredited by Ecology for the analyses performed for S&GRP.	Accept with Modification	Description of Analytical Laboratories as provided is adequate for GW monitoring plan. HASQARD is not a 40 CFR 265 Subpart F or WAC Dangerous Waste requirement. DOE HQ requires only one audit program be used with analytical laboratories and that program is the DOE CAP. PRC contract requirements require flowdown of HASQARD. HASQARD has been crosswalked to DOE CAP requirements. Will add "Statements of work flowdown quality requirements of the HASQARD" before "The laboratories are evaluated under the DOE Consolidated Audit Program	Based on the proposed text addition, the contractor's response of "Not Accepted" should be changed to "Conceptual Agreement with Text Modification". Additionally, Ecology's comment did not state, nor infer that the HASQARD is a 40 CFR 265 Subpart F or WAC Dangerous Waste requirement, or a laboratory audit program, as the Disposition would imply. HASQARD is a Quality Assurance document that must be followed for all sampling and field/laboratory analytical services provided to support the Hanford Site environmental cleanup

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					and must be accredited by Ecology for the analyses performed for S&GRP."	mission. The proposed additional text is acceptable, and adequately signifies that all aspects of the HASQARD will be followed. Accept and closed pending change to RCR and with this modification Closed with modification
85	P: A-11 S: A2.6 L: 25-28	The text states the laboratory is responsible for maintaining, and having available upon request the following items: Analytical logbooks Raw data and QC sample records Standard reference material and/or proficiency test sample data Instrument calibration information Also include the following in the list of items: Training records for employees, as they relate to analytical methods. (This will ensure that personnel are qualified to perform the specific analyses.) Laboratory State Accreditation records. Laboratory audit records. The regulatory basis for requiring the requested items for laboratories performing analytical work for the Hanford Site is provided in DOE/RL-96-68, Hanford Analytical Services Quality Assurance Requirements Document. The HASQARD serves as the quality basis for all sampling and field/laboratory analytical services provided to support the Hanford Site environmental clean-up mission. Volume 1 includes guidance related to laboratory personnel training records (Section 3.0), laboratory accreditation records (Section 12.0) and laboratory audit records (Sections 5.5, 10.0 and 10.5).	Also include the following in the list of items: Training records for employees, as they relate to analytical methods. (This will ensure that personnel are qualified to perform the specific analyses.) Laboratory State Accreditation records. Laboratory audit records.	Accept	List of laboratory items as provided is adequate for GW monitoring plan. DOE/RL contract requirements are not a 40CFR 265 Subpart F or WAC Dangerous Waste requirement. HASQARD requirements are embedded in the statement of work with the analytical laboratories. Statement of work gives PRC the right to require this type of additional information if needed to ensure lab QA. The text will be modified to include the additional three bullet items: "The laboratory is responsible for maintaining, and having available upon request, the following items: • Analytical logbooks • Raw data and QC sample records • Standard reference material and/or	The additional items that have been proposed by Ecology are explicitly included in the HASQARD, Volume 1, within Section 3.0 (personnel training records), Section 12.0 (laboratory accreditation records), and Sections 5.5, 10.0 and 10.5 (laboratory audit records), respectively. Therefore, contrary to the Disposition, the list of laboratory item as provided is this GW monitoring plan is not adequate. Either include the additional three items in the GW monitoring plan, as requested, or edit Line 28 as follows: "The laboratory is responsible for maintaining, and having available upon request, the following items, in addition to other items

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		The requirement to comply with DOE/RL-96-68 is included in DOE/RL and DOE/ORP contracts with their contracted entities.			proficiency test sample data • Instrument calibration information • Training records for employees, as they relate to analytical methods. • Laboratory state accreditation records • Laboratory audit records"	which are specified in the HASQARD: • Analytical logbooks • Raw data and QC sample records • Standard reference material and/or proficiency test sample data • Instrument calibration information" Closed with modification
86	P: A-14 S: A3.1 L: Table A-3	Highest allowable PQLs exceed MTCA Method B target cleanup level for 1,1- Dichloroethane, 1,1-Dichloroethene, and vinyl chloride. If PQLs exceed cleanup levels used for screening or final cleanup levels, then analytical data might be "non-detect" when in fact an exceedance is present (false negative).	Revise PQLs or identify discrepancy between laboratory analytical capability and MTCA Method B target cleanup level.	Not Accepted	Interim status groundwater monitoring requirements do not contain any requirement for cleanup levels. The PQLs in the table are for routine analyses where there is no requirement to meet a cleanup level.	Accepted, but not accepted for reasoning provided. PQLs listed on page are contractually determined, per footnote b. Please be aware that analytical results may not be accepted which later exceed an established cleanup level (whether federal drinking water standard or MTCA cleanup level) set under an enforceable document. Closed
87	P: A-18 S: A3.3 L: Table A-5	The Notes read "The information in this table does not represent EPA requirements but is intended solely as guidance." Please provide a viable reference for the Acceptance Criteria.	Provide a viable reference for the Acceptance Criteria shown on the table.	Accept	Footnote changed to read, "The information in this table does not represent EPA requirements but is intended	Accept and closed with this modification

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					solely as guidance. The table is consistent with SW-846 and HASQARD."	
88	P: A-20 S: A3.3.2 L: 37-38	The text states, "Data from samples analyzed outside holding times are flagged in the HEIS database with an "H"." It should also be noted that data that do not meet holding time requirements may be deemed Rejected by third party validation.	Include that data that do not meet holding time requirements may be deemed Rejected by third party validation.	Not Accepted	Samples that exceed holding times may receive a "flag"; e.g., it might be the case that a sample that exceeds a hold time by less than 2x the specified hold time might be flagged with a "J" for estimated concentrations. Third party validation procedures/practices are outside the scope of the GWMP.	Accept and closed
89	P: A-25 S: A4	Provide when and where DOE and Ecology get notified of assessment findings.	See comment	Accept	Comment dispositioned on 183-H RCR, comment 85. These assessments are internal assessments and are not subject to RCRA regulation. If an assessment finding results in sampling issues that impact a regulatory requirement, DOE would be informed and the matter discussed with Ecology at the appropriate level and time. Added the following text to A.4.2: These assessments are internal assessments and are not subject to RCRA regulation. If an assessment finding results in sampling issues that impact a regulatory requirement, DOE would be informed and the matter	Remove 1st sentence in response. Provide this information in the text and then closed with this modification. Closed with modification

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					discussed with Ecology at the appropriate level and time.	
90	P: A-27 S: A5.2 L: 21-23	The text states, "If performed, data validation activities will be based on EPA functional guidelines." Please explain how it will be determined if data validation will be required, and what percentage of the data will be validated.	Please explain how it will be determined if data validation will be required, and what percentage of the data will be validated.	Accept with Modification	Multiple quality control reviews and correction processes are exercised, as appropriate, during the sampling and analysis progression to ensure the quality and usefulness of analytical and field data. These review/correction processes are conducted during the groundwater sampling package generation, field paperwork generation, shipping, laboratory analysis, chain-of-custody verification, data package verification, data reviews, data quality assessments, and independent data validations. Processes used to identify and resolve analytical and sampling quality issues include review of data QC parameters, identification of administrative and technical errors in data packages, identification of trends adverse to quality and of possible programmatic issues, identification of out of trend data, corrective actions requiring reanalysis or assignment of data review codes, evaluation of field QC and laboratory QC, determination of usability of entire data set, independent	To satisfy Ecology's comment, please incorporate the quoted information from the Disposition. "Data validation is performed at the discretion of the RCRA groundwater program manager based on the results of the QC samples for an individual network, discussions with the project scientist, and discussions with the laboratory services manager. If defined as appropriate, data validation (third party) will be performed at a minimum frequency of 5 percent." Change the response from "No Change Needed" to "Accept with Modification". Closed with modification

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					assessment of laboratory accuracy and precision in groundwater, laboratory performance evaluations, blind standards program and data validation. Data validation is performed at the discretion of the RCRA groundwater program manager based on the results of the QC samples for an individual network, discussions with the project scientist, and discussions with the laboratory services manager. If defined as appropriate, data validation (third party) will be performed at a minimum frequency of 5 percent. Will change Section A5.2 to state: Data validation is performed at the discretion of the Project Delivery Manager for Groundwater Science and under the direction of the SMR group. It is based on the results of the QC samples for an individual network, discussions with the project scientist, and discussions with the laboratory services manager. If defined as appropriate, data validation (third party) will be performed at a minimum frequency of 5 percent and be based on EPA functional guidelines.	

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91	P: B-3 S: B2 L: 13-14	The text states, "...wells are purged utilizing the three borehole volume method." Please explain the process of this method, as it is not intuitive for all reviewers.	Please explain the process of the three borehole volume method, as it is not intuitive for all reviewers.	Accept	Change sentence to read "...wells are purged utilizing the equivalent volume as that of 3 borehole diameters multiplied by the length of the saturated portion of the well screen." Note that this response has had a change. The previous response had been accepted and closed.	Accept and closed
92	P: B-3 S: B2 L: 25-31	The text discusses the use of filtered and unfiltered samples. A joint letter written by the Environmental Protection Agency (EPA) and the Department of Ecology directly addressed the use of filtered samples for groundwater monitoring well at the Hanford Site. Specifically, "...groundwater samples should not be field- filtered unless the turbidity exceeds 5 NTUs. Field-filtering under any circumstance must be specifically requested, with basis provided, and approved by Ecology or EPA in work plans." Provide the basis for the proposal to filter the groundwater samples that are not exceeding a turbidity level of 5 NTU's for the Monitoring Well Network for the 216-A-36B Crib.	Provide the basis for the proposal to filter the groundwater samples that are not exceeding a turbidity level of 5 NTU's for the Monitoring Well Network for the 216-A-36B Crib.	No Change Needed	See response to comment 65. The technical basis for collection of filtered samples will be provided in Table 3-1.	The technical basis for the need to collect filtered GW samples is not clear. The Disposition states that the unfiltered GW samples will be used to satisfy Ecology requirements. This warrants elaboration, since Ecology does not customarily support the use of field filtered GW samples. The Disposition also seems to state that filtered GW samples are also requested for this situation. Please state the explicit technical basis for the collection of filtered GW samples in this situation in order to obtain the approval of Ecology. Closed
93	P: B-4 Sec. B.2.1	This section is missing significant details/information on "Decontamination of Sampling Equipment". No information is provided on the procedures to ensure	See comment	Accept with Modification	Summary paragraphs describing the	Remove the regulatory discussion, then conceptually agreed.

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		"decontamination of sampling equipment". Add detail. Required as part of 40 CFR 265 Subpart F and WAC 173-303-645			decontamination process are added to Section B2.1.	Closed with modification
94	P: B-7 S: B4 L:	This section is calibration of field equipment, and is generic. Isn't there more of a standard operating procedure that is available for groundwater sampling equipment calibration? Sufficient detail for field procedures.	See comment	Accept with Modification	No requirement for field calibration procedures exists in interim status regulations found at 40 CFR 265 Subpart F or WAC 173-303-400(3)(c)(v). However, a summary description of field instrument calibration will be added to Section B4.	Accept and closed per this modification
95	P: B-11 S: B6 L: 6-7	Don't offsite laboratory have to follow the applicable facility acceptance criteria? And don't they return rad contaminated samples? This section seems to lack sufficient detail. Isn't there a SOP that can be included and not just reference the Waste Control Plan in its entirety? Sufficient detail for field procedures.	See comment	Accept with Modification	Additional details of the waste management process are added to Section B6. Radioactive samples are outside the scope of the interim status GWMP/RCRA, however Section B6 does contain language that states offsite labs are responsible for disposal of unused sample quantities resulting from the interim status GWMPs.	Accept and closed with this modification
96	P: B-11 S: B6 L:	Provide why dangerous waste requirements are not used. CERCLA requirements are inappropriate for dangerous waste management.	See comment	Accept with Modification	Comment dispositioned on 183-H RCR, comment 87. In order to provide a consistent waste management approach during groundwater well sampling activities which routinely are conducted for both RCRA and CERCLA actions, a common waste management plan is used for both actions. Both actions will follow the requirements of WAC 173-303 for container waste storage, packing,	Remove 1st sentence. Closed with modification.

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					labeling, and eventual waste disposal. Additional details of the waste management process are added to Section B6.	
97	P: B-13 S: B7 L:	Again, this section seems to be short, vague, and contains generic descriptions. Sufficient detail isn't present, even to satisfy interim status requirements as referenced for 40 CFR 265.14 and 40 CFR 265.16.	See comment	Not Accepted	Level of detail is sufficient for GW monitoring plan. The GW monitoring plan is not a field procedure. Furthermore, 40 CFR 265 Subpart B (40 CFR 265.14/Security and 40 CFR 265.16/Personnel Training) are not the focus of the GW monitoring plan nor required by 40 CFR 265 Subpart F.	Accept and closed
98	P: C-1 S: L: Table C-2	Referencing Table 3-3 (page 3-7) would be a useful footnote so depth to water and remaining water column can be linked to the wells presented.	See comment	Accept	Footnote referencing Table 3-3 will be added to Table C-2.	Closed with this modification