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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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March 14, 2016

16-NWP-053

Mr. Michael W. Cline, Federal Project Director
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: A5-11
Richland, Washington 99352

Re: Department of Ecology's Response to the *216-A-29 Ditch Interim Status Groundwater Quality Assessment Monitoring Plan*, DOE/RL-2016-23, Draft, Revision 0, Received January 27, 2016 (*Monitoring Plan*)

Dear Mr. Cline:

The Department of Ecology (Ecology) received the referenced *Monitoring Plan*, submitted as required by 40 Code of Federal Regulations (CFR) 265.93(d)(2), and referenced by Washington Administrative Code (WAC) 173-303-400.

Ecology reviewed the *Monitoring Plan* in accordance with the *Tri-Party Agreement*, Section 9.2.1. Our comments are provided on the enclosed Review Comment Record. Ecology is submitting a copy of the Review Comment Record to the Administrative Record as specified in *Tri-Party Agreement*, Section 9.4.

Ecology also received the United States Department of Energy Richland Operations Office's (USDOE-RL) letter 16-ESQ-0032, "Notification of Ground Water Sampling Results Exceeding Specific Conductance for the 216-A-29 Ditch Monitoring Well Network in 2015 per 40 CFR 265.93(2)(d)(1)," dated January 28, 2016.

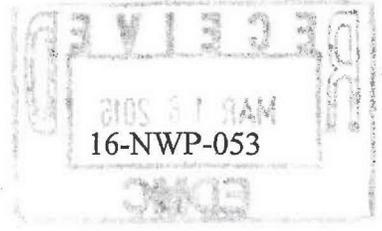
USDOE-RL and the CH2M HILL Plateau Remediation Company (CHPRC) informally notified Ecology of the exceedances in the groundwater samples for the 216-A-29 Ditch well network at a meeting on December 14, 2015. USDOE-RL presented exceedances of the specific conductance critical mean for wells 299-E25-32P, 299-E25-35, and 299-E25-48, as well as confirmation of the specific conductance critical mean exceedance for 299-E25-32P. USDOE-RL identified that total organic carbon (TOC) exceeded in well 299-E25-26.

During the December 14 meeting, USDOE-RL presented a schedule for confirmation sampling. USDOE-RL and Ecology discussed access issues for re-sampling monitoring well 299-E25-48, caused by the 241-AY-102 Pipeline construction.

On January 14, 2016, USDOE-RL and CHPRC called Ecology staff to confirm the exceedance of the specific conductance critical mean in wells 299-E25-35 and 299-E25-48. Based on the confirmation sampling result, TOC did not exceed the critical mean in well 299-E25-26.



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The *Monitoring Plan* identifies an intention to make a “first determination” as provided by 40 CFR 265.93(d)(5). As USDOE-RL is aware, these regulations require the first determination to be made “as soon as technically feasible.” The *Monitoring Plan* identifies in Section 5 that the first determination under the assessment program will be submitted as “to be determined (TBD).” Ecology does not consider a submittal date of “TBD” to represent “as soon as technically feasible” or to satisfy the intent of 40 CFR 265.93(d)(5).

Per WAC 173-303-400(3)(v)(E), the initial first determination report should be submitted within 15 days after the receipt of the final analytical data for the first sampling event.

Also, Ecology requests to be notified at least five business days prior to the next 216-A-29 Ditch groundwater quality assessment sampling event. This will allow us the option of observing sampling procedures and collecting split samples.

If you have any questions, please contact me at nina.menard@ecy.wa.gov or (509) 372-7941, or Tim Mullin, Environmental Specialist, at tim.mullin@ecy.wa.gov or (509) 372-7970.

Sincerely,

Nina M. Menard
Environmental Restoration Project Manager
Nuclear Waste Program

tm/aa
Enclosure

cc electronic w/enc:

- Dave Bartus, EPA
- Dennis Faulk, EPA
- Doug Hildebrand, USDOE
- Jim Hanson, USDOE
- Marty Doornbos, CHPRC
- William Faught, CHPRC
- Jon Perry, MSA
- Ken Niles, ODOE
- Dib Goswami, Ecology
- Nina Menard, Ecology
- Tim Mullin, Ecology
- Kim Welsch, Ecology
- Cheryl Whalen, Ecology
- Environmental Portal
- Hanford Facility Operating Record
- CHPRC Correspondence Control
- USDOE-RL Correspondence Control

cc w/enc:

- Steve Hudson, HAB
- Administrative Record
- NWP Central File

cc w/o enc:

- Rod Skeen, CTUIR
- Gabriel Bohnee, NPT
- Alyssa Buck, Wanapum
- Russell Jim, YN
- NWP Reader File

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Document Lead/Phone #/email: Tim Mullin/509-372-7970; tim.mullin@ecy.wa.gov Project Manager/Phone #/email: Nina Menard, (509) 372-7941, nina.menard@ecy.wa.gov

Item # Page # Section # Line#s	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
Item (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.			
Item (GENERAL) P: S: L:	This document does not meet the requirements as established in 40 CFR 265.93(d) and WAC 173-303-400(3). Provide the constituents results for all values that are associated with the exceedance of specific conductance. Provide all sample data that was collected and analyzed for the sampling event associated with the first specific conductance exceedance in October and any other data associated with the "verification" samples in December 2015.	See comment			
Item 1 P: 1-1 S: 1 L:	No line numbers for report. Include line numbers for report so can easily tie comments to specific lines.	Add line numbers to report.			
Item 2 P: 1-1 S: 1 L: 1st paragraph	Insert "Subpart F, Groundwater Monitoring." at the end of the next to last sentence to read, "...Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart F, Groundwater Monitoring."	Revise text			
Item 3 P: 1-1 S: 1 L: 2 nd paragraph	Delete this paragraph because you cite these reports throughout the document and DOE/RL-2008-58, Rev. 1 is Appendix C and you are referencing the current document under review and the other document (DOE/RL-2008-58, Rev. 0 is the current groundwater monitoring plan for A-29 Ditch, which is cited in the 1 st paragraph.	Revise text			
Item 4 P: 1-1 S: 1 L: 3 rd paragraph	After the first sentence cite the letter notifying Ecology of the specific conductance exceedance and attach it as an appendix to this document. This letter confirms that U.S. DOE and the contractor met the requirements of 40 CFR 265.93(c)(2) and 40 CFR 265.93(d)(1).	Revise text			
Item 5 P: 1-1 S: 1 L: 3 rd paragraph	"The 2010 monitoring plan was in the process of being revised in 2015 when the need for groundwater quality assessment arose." Identify that "the need" was because of the confirmation of specific conductance exceedances, as identified earlier in the section.	Revise sentence to reference specific conductance exceedances			
Item 6 P: 1-1 S: 1 L: 3 rd paragraph	Change "activates" to "activities." Change the sentence to read, "The plan for conducting the assessment includes performing those activities needed to determine whether dangerous waste release has occurred from the facility." A release has occurred because this is an unlined ditch and the conceptual site	Revise text			

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	model clearly states "liquid wastes released in the ditch migrated through the vadose zone and into groundwater." Provide here the requirement to define the magnitude and extent of the dangerous waste that has "migrated into the groundwater." In addition, a verified groundwater impact has been indicated in the specific conductance concentration levels. Waste that was released has now broken down into sulfate (sulfuric acid) and nitrate (nitric acid and cadmium nitrate).				
Item 7 P: 1-1 S: 1 L: 3 rd paragraph	Change "the 2010 monitoring plan to DOE/RL-2008-58, Rev. 0. Change "revised indicator parameter evaluation plan" to "DOE/RL-2008-58, Draft Rev. 1 or Appendix C."	Revise text			
Item 8 P: 1-1 S: 1 L: 3 rd paragraph	Provide that DOE/RL-2008-58, Draft Rev. 1 is now Appendix C of this document.	Revise text			
Item 9 P: 1-1 and 1-2 S: 1 L: Bullet list	Provide in the bullets the sections in this document where the necessary information related to the requirements identified in 40 CFR 265.93(d)(3) and 40 CFR 265.93(d)(4). The bullets are missing "The concentrations of the dangerous waste or dangerous waste constituents in the groundwater." Include this bullet and link all these to the regulatory requirements.	Revise text			
Item 10 P: 1-1 S: 1 L: Last bullet	Based on 40 CFR 265.93(d)(5), the first determination is supposed to be prepared "as soon as technically feasible." Ecology does not view one year as meeting this requirement. Fifteen days after the first determination is conducted a report is due to Ecology to provide the assessment of groundwater quality. Please schedule the first sampling event as soon as possible (i.e., in late March). Ecology views the owner/operator as being out of compliance with the proposed implementation of the first determination. The letter provided confirmation sampling to move forward immediately on sampling for a suite of analytes.	Revise text			
Item 11 P: 1-2 S: 1 L: 1st paragraph	Provide what "full" represents in the sentence "A first determination based on full implementation..." This word is not in the regulations (40 CFR 265.93(d)(5). Provide a timeframe for "as soon as technically feasible." Add at the end of the last sentence "within 15 days."	See comment			
Item 12 P: 1-2 S: 1 L: 2 nd paragraph	On the first sentence, well 299-E25-2 shows contamination exists at this point. This well is contaminated and does not help define the area of impact per 40 CFR 265.93(d)(4). Ecology does not think this represents appropriate upgradient well that is "capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer." Provide a more adequate representative upgradient well for the 216-A-29 Ditch.	See comment			
Item 13 P: 1-2 S: 1 L: 2 nd paragraph	Provide which wells are being referenced in the last sentence of this paragraph. Depending on which proposed well network being referenced, one of them would be in violation of both WAC 173-303 and 40 CFR 265 Subpart F, in particular 40 CFR 265.93(d) for the assessment monitoring program.	Provide the monitoring well names that are to be included in the monitoring well network.			
Item 14 P: 1-2	The first sentence of this paragraph is incorrect and needs to be rewritten. Based on the regulations, it is clear that a contaminant release has occurred based on the	See comment			

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S: 1 L: 3 rd paragraph	letter with the analytical data that includes the verification results. Include this letter in the report.				
Item 15 P: 1-2 S: 1 L: 3 rd paragraph	Based on 2015 groundwater chemical analysis, the proposed upgradient well 299-E25-2 has a higher specific conductance value than the three downgradient wells in assessment monitoring. Provide how you know it is limited to sulfate and nitrate only for the increased specific conductance.	See comment			
Item 16 P: 1-2 S: 1 L: 4 th paragraph	Sulfuric acid was released to the 216-A-29 Ditch, which has degraded to the byproduct sulfate. As well, nitrate has been released as cadmium nitrate and nitric acid, which in the aerobic environment has become the byproduct nitrate. Both of these need to be monitored as part of the groundwater assessment program. Sulfuric acid discharge history is discussed in WHC-SD-EN-EV-032, p.11.	See comment			
Item 17 P: 1-2 S: 1 L: 5 th paragraph	“waste site history” Revise to “dangerous waste management unit history” or “surface impoundment history”, if “waste site” refers to only 216-A-29 Ditch. Changing the terminology currently presented when a specific unit is referenced provides a defined term under WAC 173-303-040 to which Ecology can regulate.	Revise text			
Item 18 P: 1-3 S: Table 1-1 L:	Provide what the dashes (--) represent. The conceptual site model needs to be modified in light of the exceedance that occurred. Clearly waste has migrated downward to the groundwater as stated and needs to be discussed in this plan, not reference another plan in Appendix C. Provide how far the plume is expect to have migrated from the facility. The additional sampling confirms the specific conductance measurements are verified and this unit needs assessment. The regulatory basis in Section 2.2 of DOE/RL-2008-58, Draft Rev. 1 does not fit this plan. Provide a regulatory basis for this plan addressing interim status groundwater assessment monitoring. Interpretation is another section that is missing from this plan that needs to be added. Provide how far field wells will be used in this plan, which is missing as per the requirements of 40 CFR 265.93 and 40 CFR 265.94. Provide where the additional information can be found in this plan.	See comment			
Item 19 P: 1-4 S: Table 1-1 L:	Appendix B in DOE/RL-2008-58, Draft Rev. 1 should be a part of this plan.	Provide requested information			
Item 20 P: 2-1 S: 2 L:	The background introduction is missing and should be included for the reader as to what is in Chapter 2 and what made this unit be in assessment monitoring before and now for completeness and to meet the requirements in 40 CFR 265 Subpart F.	Provide requested information			
Item 21 P: 2-1 S: Table 2-1 L:	Provide which waste constituents are recognized in the Part A Form. These would be corrosivity (D002) hydrazine (U133), cadmium (D006) as cadmium nitrate, and State-only dangerous waste (WT02). Indicate on this table which waste constituents correspond to these waste codes.	Add waste codes per Part A Form			

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Item 22 P: 2-1 S: 2.1 L: Table 2-1	Delete "CERCLA reportable release" Chapter 70.105 RCW, and through implementation via WAC 173-303, regulate the dangerous waste related to the 216-A-29 Ditch.	Revise text			
Item 23 P: 2-2 to 2-3 S: 2.1 L: Table 2-2	Regulations cited have a few typographical errors.	Review 40 CFR 265, Subpart F and revise text			
Item 24 P: 2-1 S: 2.2 L:	Provide that in accordance with WAC 173-303-400(3), a copy of this groundwater assessment plan is to be submitted to the department and immediately implemented.	Provide requested information			
Item 25 P: 2-2 S: Table 2-2 L:	Provide all the missing "pertinent applicable regulations. Missing applicable regulations are 40 CFR 265.90, 40 CFR 265.93(d)(1) and (d)(2), 40 CFR 265.93(d)(6), 40 CFR 265.93(d)(7), 40 CFR 265.93(d)(7)(i), 40 CFR 265.93(d)(7)(ii), 40 CFR 265.93(e), and 40 CFR 265.93(f). Under Recordkeeping and Reporting change "graragraph" to "paragraph."	Provide requested information			
Item 26 P: 3-1 S: 3.1 L: 1 st paragraph	Provide why pesticides, herbicides, and dioxins and furans are not included in the analyses. Provide what "supporting constituents" are. This term is not found in the regulations. Provide how the upgradient wells will be used to "determine if upgradient source(s) have contributed to the exceedances or any detected assessment constituents.	Provide requested information			
Item 27 P: 3-1 S: 3.1 L: 1 st paragraph	Provide what "other wells in the 216-A-29 Ditch groundwater monitoring well network" will be used, "if dangerous waste constituents are detected at the downgradient wells with the current specific conductance exceedances."	Provide requested information			
Item 28 P: 3-1 S: 3.1 L: 1 st paragraph	Delete the phrase, "and not upgradient contributions are identified." It does not matter "if upgradient contributions are identified" under the dangerous waste regulations. Groundwater has been impacted. This sentence is not valid under the dangerous waste regulations.	Revise text			
Item 29 P: 3-1 S: 3.1 L: 2 nd paragraph	Provide what is the "entire groundwater monitoring network." It is not clear which wells are being discussed being two monitoring well networks are proposed in the plan. Provide what "supporting constituents" are in this report.	Provide requested information			
Item 30 P: 3-1 S: 3.1 L: 2 nd paragraph	Provide why a change in the groundwater assessment monitoring well network would occur in Section 3.2. All the discussion of monitoring well networks in 3.1 should occur in the next section 3.2. Monitoring well attributes (Tables 3-3 and 3-4 and Figures 3-1 and 3-2 should be cited in Section 3.2, Monitoring Well Network" not in this section (section 3.1).	Provide requested information			
Item 31 P: 3-1 S: 3.1 L: 2 nd paragraph	Provide why the need for this "future well network." It is unclear why a change in monitoring wells are needed. This "future monitoring well network" is out of compliance and would be in violation of the requirements. Well 299-E25-48 is not included in the network – one of the wells with exceedance.	Provide requested information			

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Item 32 P: 3-1 and 3-6 S: 3.1 and Table 3-2 L: 2 nd paragraph	Based on the regulations (40 CFR 265.93(d)(7), the determinations are required quarterly not semiannually. Provide for quarterly sampling discussion in the text here and on Table 3-2. Sampling and analyses would continue under the groundwater assessment program "until final closure of the facility."	Provide requested information			
Item 33 P: 3-1 S: Table 3-1 L:	Include in the table, nitrate, chloride, and sulfate as these are all byproducts of dangerous waste disposed in the 216-A-29 Ditch. Provide analysis of hexavalent chromium.	Provide requested information			
Item 34 P: 3-1 S: Table 3-1 L:	Include sampling for hydrazine byproducts or reference documentation (including Ecology's approval letter for a unit wide contained in determination for groundwater) which excludes hydrazine from the sampling requirements.	Provide applicable references and documentation. Update text to reflect these changes.			
Item 35 P: 3-1 S: 3.1 L: Table 3-1	Table 3-1 lists cyanide and sulfide as the only anions that are included in the 216-A-29 Ditch Groundwater Quality Assessment. However, Table 3-2 lists the site anions as bicarbonate, chloride, nitrate, and sulfate. Please explain the discrepancy.	Explain the discrepancy between the anions listed in Table 3-1 and Table 3-2.			
Item 36 P: 3-6 S: 3.1 L: Table 3-2	Table 3-2 lists Filtered and Unfiltered parameters will be obtained for 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-29 Ditch.	Provide the basis for the proposal to filter the groundwater samples for the Monitoring Well Network for the 216-A-29 Ditch.			
Item 37 P: 3-6 S: Table 3-2 L:	Provide for all of the Table 3-1 analysis to be conducted quarterly as well as the "supporting constituents, metals, phenols pH, specific conductance, temperature, turbidity, and water level measurements for the upgradient and associated downgradient wells. The entire network needs to be monitored for these constituents to determine the nature and extent and migration of contaminant plume based on 40 CFR 265.93(d)(4). Quarterly groundwater sampling is required by 40 CFR 265.93(d)(7). Include Total Dissolved Solids and Total Suspended Solids for the analyses to support a better analytical method that supports specific conductance.	Provide requested information			
Item 38 P: 3-6 S: Table 3-2 L:	Provide a replacement for so-called upgradient well 299-E25-2. This well is known to be contaminated as the specific conductance in it and nearby 299-E25-93 are the highest concentration values compared to any well associated with the 216-A-29 Ditch monitoring well network. This well does not meet WAC 173-160 requirements. Provide an adequate monitoring well network.	Provide requested information			
Item 39 P: 3-6 S: Table 3-2	Provide for monitoring of well 299-E25-28 that is the deep well. This well is extremely useful to understand contaminant flow and it still monitors the "uppermost aquifer."	Provide requested information			

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L:					
Item 40 P: 3-8 S: 3.2 L: 1 st paragraph	Delete the word "initial." Although this well network works for indicator parameter monitoring program it does not meet the requirements for the groundwater assessment monitoring program. The monitoring well network is insufficient as it does not examine the "the rate and extent of migration of the dangerous waste or dangerous waste constituents in the groundwater." Provide additional downgradient wells, a compliant upgradient well associated with downgradient well 299-E25-48. Appendix C does not provide "construction details and pertinent information for the monitoring wells." For this assessment plan, Appendix B should be cited.	Provide requested information			
Item 41 P: 3-8 S: 3.2 L: 2 nd paragraph	If the monitoring well network proposed in DOE/RL-2008-58, Draft Rev. 1 are used, monitoring well 299-E25-48 is not a part of that network, yet it is a well that exceeds specific conductance and is one of the wells that placed the unit under groundwater assessment monitoring. Leaving this well out of the network would be a violation of the regulations. Place this well back into the program.	Add monitoring well to network			
Item 42 P: 3-8 S: 3.2 L: 2 nd paragraph	Provide what the terminology means "CHPRC/USDOE buy-back list as a high priority" means. The three additional new wells should be high priority and drilled, installed, and developed as soon as possible. Provide a timeline when this will occur and document it in the document.	Provide requested information			
Item 43 P: 3-8 S: 3.2 L: 2 nd paragraph	Provide in Section 3.2 and/or Table 3-2, the rate of decline in the wells to understand how long before they are predicted to go dry.	Provide requested information			
Item 44 P: 3-8 S: 3.2 L: 2 nd paragraph	Provide when the additional 3 wells will be drilled, installed and developed for sampling.	Provide requested information			
Item 45 P: 3-9 S: 3.2 L: Table 3-2	Well 299 E-25-34 appears as an upgradient well in Figure 3-2 and should be bolded on Table 3-2.	Bold the well identification number.			
Item 46 P: 3-9 S: 3.2 L: Table 3-3	Well 299-E25-28 completion date on Table 3-3 is 1985, whereas the boring log says the well was completed in 1986. Reconcile this discrepancy.	Determine correct date and revise text			
Item 47 P: 3-10 S: Figure 3-1 L:	Provide additional downgradient monitoring wells to the network. Existing wells to the south and east of the A-29 Ditch should be utilized to provide the rate and extent of migration of the dangerous waste or dangerous waste constituents in the groundwater.	Provide requested information			
Item 48 P: 3-11 S: 3.2 L: Figure 3-2	Add well network from Figure 3-1 to Figure 3-2. Well 299-E25-2 needs to also be replaced. If well 299-E25-48 has an exceedance, it needs to be on Figure 3-2 and needs to be sampled.	Add detail to figure			

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Item 49 P: 3-11 S: Figure 3-2 L:	Provide additional wells to be monitored as part of the assessment monitoring system. More wells are required, not less wells. Missing wells include: 299-E25-48 (well with measured exceedance of chromium), well 299-E25-28 (deep well uppermost aquifer), and well 699-E43-45. Upgradient point of compliance wells are needed in this well network. Please include well 299-E25-28 into the network.	Provide requested information			
Item 50 P: 3-11 S: Figure 3-2 L:	Include well 299-E26-12 back into the network or provide adequate reason for its removal, especially if another non-compliant well is proposed to be used.	Provide additional detail requested			
Item 51 P: 3-12 S: 3.2 L: Table 3-4	Well network proposed is insufficient. 299-E25-48 needs to be included. If the replacement and new wells are on the high priority list, which year are they going to be installed? TBD is too vague. Per 40 CFR 265.93(3)(iv), a schedule of implementation is required. When is well 299-E25-2 going to be replaced?	Provide additional detail requested			
Item 52 P: 3-12 S: 3.2 L: Table 3-4	Footnote requires revision. "pgradient wells" should be revised to ". Upgradient wells" Editorial	Revise text			
Item 53 P: 4-1 S: 4-1 L: 1 st paragraph	Provide what is meant by "dangerous constituents at naturally occurring concentrations." It is unclear what constituents and at what concentrations are being addressed. As written, this sentence needs a lot of justification to support it. Provide all the justification. If it is from an upgradient source and now under the facility, it is the facility requirements to address this contamination and conduct cleanup of it. It is the owner/operators responsibilities.	Provide requested information			
Item 54 P: 4-1 S: 4.1 L: 2 nd paragraph	Provide what is "supporting constituents." All wells are part of the groundwater assessment strategy not just the wells that had critical mean exceedance. Include all the wells shown on Figure 3-1.	Provide requested information			
Item 55 P: 4-1 S: 4.1 L: 3 rd paragraph	Delete the phrase "presented below." This phrase is not needed. The "initial data evaluation" is the verification of the exceedance for specific conductance. This trips the requirement to do more thorough analyses as provided in Table 3-1. Provide the basis for the last sentence. It is not provided in 40 CFR 265 Subpart F. This sentence, "Two consecutive detections or nondetects are needed to verify presence or absence of a dangerous waste constituent" needs to be deleted. Once determine that it is not a laboratory analysis issue, the site is under groundwater assessment monitoring program until closure of the facility or through post-closure for a disposal unit under 40 CFR 265 Subpart F.	Revise text			
Item 56 P: 4-1 S: 4.1	The first and second sampling events should be quarterly— however the first determination report is required as soon as technically feasible (40 CFR 265.93(d)(5)). Ecology sees the first sampling event occurring sooner than 6 months from initial verification (December 2015). The first determination report should be submitted 15 days after receipt of the laboratory data for the first	Revise text			

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L: Initial Data Evaluation, 1 st para.	sampling event, per WAC 173-303-400(3)(c)(v)(E). Any detection would constitute placing the unit in groundwater assessment monitoring. Delete all discussion of background concentration. This is not supported by the regulations.				
Item 57 P: 4-1 S: 4.1 L: Step 1 and Step 2.	For the inorganics, nitrate and sulfate are byproducts of the dangerous waste constituents, which are nitric acid, hydrazine, sulfuric acid, and cadmium nitrate. Therefore, nitrate and sulfate are part of the dangerous waste constituent process.	Provide requested information			
Item 58 P: 4-1 S: 4.1 L: DWCEPS Step 1	Provide how it will be determined for appropriate groundwater flow directions. Based on DOE/RL-2008-58, Draft Rev. 1, any deviation from 160 degrees ±20 degrees is considered in groundwater flow direction. However, depending on where on the ditch this flow direction can change from northwest to due east flow on the east side. A more thorough definition of groundwater flow direction is required.	Provide requested information			
Item 59 P: 4-1 and 4-2 S: 4.1 L: 29-32 and 1-13	Steps 1 through 3 are required to be conducted through one sampling event. Another sampling event is not required and the first determination report is to be prepared and submitted 15 days after the laboratory analysis has been completed based on WAC 173-303-400(3)(c)(v)(E). Preparation of the first determination report will require using preliminary laboratory data to write the report to meet the required submittal. It is designed to be conducted as soon as technically feasible, not in years.	Provide requested information			
Item 60 P: 4-2 S: 4-1 L: NonDWCEPS	Provide what is being discussed as it relates to "Nondangerous Waste Constituent Evaluation Process." Since this unit is under Groundwater Assessment Monitoring Program as of January 2016, it is unclear why "indicator parameters" TOX and TOC are still being monitored.	Provide requested information			
Item 61 P: 4-2 S: 4.1 L: Last paragraph	The first sentence are requirements in accordance with 40 CFR 265 Subpart F and WAC 173-303-400. Provide a reference to these requirements. Provide the timeframe this will take in this plan to submit the first determination report. Provide why it will take one year to complete sampling. Potential dangerous waste is being released into the environment and according to the requirements the first determination report should be conducted "as soon as technically feasible." One year to complete sampling does not appear to honor "as soon as technically feasible."	See comment			
Item 62 P: 4-3 S: 4.1 L: 1 st paragraph	Add "and the Hanford annual groundwater report" after "first determination report" to read "216-A-29 waste site will be included in the first determination report and the Hanford annual groundwater monitoring report ..." Insert "assessment" between "groundwater" and "monitoring" to read "216-A-29 will be removed from the groundwater assessment monitoring plan" in the last sentence.	Revise text			
Item 63 P: 4-3 S: 4.1	Because nitrate and sulfate are both byproducts of the dangerous waste constituents and they have shown a steady increased, historical sampling analysis provides a clear indication that a significant change occurred in 2012 in certain	Provide requested information			

O/C = open or closed

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L: 1st paragraph	downgradient wells. This information provides an indication of impacts to groundwater from past releases. Sample for nitrate and sulfate and identify which dangerous wastes are the source of the nitrate and sulfate.				
Item 64 P: 4-3 S: 4.1 L: 7-8	<p>“Dangerous waste constituents identified in Table 3-2 that are not detected or not attributable to 216-A-29 Ditch will be removed from the groundwater monitoring plan.” How will a determination be made to determinate if a dangerous waste(s) or dangerous waste constituent(s) are from the 216-A-29 Ditch?</p> <p>Provide specifics regarding how waste can be attributed to another unit. Identify specific differences in dangerous waste characteristics can be used to separate groundwater contamination and determine origin?</p>	Provide additional detail			
Item 65 P: 5-1 S: Table 5-1 L:	Provide why sampling is being conducted semiannually instead of adopting the quarterly schedule. A quarterly schedule would indicate a sense of urgency that would be appropriate for potential dangerous waste entering the environment to the point it is detected in groundwater.	Provide requested information			
Item 66 P: 5-1 S: Table 5-1 L:	Provide why “Initial Data Evaluation” could not occur after the first sampling event and compared to historical data on what contaminants were detected instead of waiting until December 2016. Provide the plan of action that would occur if dangerous waste or dangerous waste constituents were detected in samples collected during the first sampling event.	Provide requested information			
Item 67 P: 5-1 S: Table 5-1 L:	Under “First Revision of Assessment Plan” provide when in 2017 this plan will be revised. Provide how to revise this plan when it cannot be determined when the first determination report will be submitted to Ecology. This implementation schedule does not meet the requirements of the regulations. Provide dates for all components.	Provide additional detail and revise text			
Item 68 P: 5-2 S: Table 5-1 L:	Under “Revision of Assessment Plan When Proposed Future Well Network Completed” provide a date when these wells are to be installed and developed. As written, this could be anytime in the future (i.e., years from now). It should be noted that well 299-E25-48 is not a part of this “future well network” and would need to be if continued under groundwater assessment monitoring.	Provide additional detail and revise text			
Item 69 P: 5-2 S: Table 5-1 L:	Provide a date for the “Complete First Determination Report.” A date of “TBD” is not appropriate and does not meet the regulations indicating a serious commitment to meet the criteria or due diligence of “as soon as technically feasible.” Based on the past examples, reports are 9 months to a year behind after sample analysis is received, thus the report would not be available until September or December 2017. That time frame would be two years since notification of specific conductance exceeding dangerous waste or dangerous waste constituents may be impacting groundwater.	Provide requested information			
Item 70 P: A-1 S: A L: Table A-1	<p>Describe how the PQL values are obtained. Have any non-detect results exceeded the Model Toxics Control Act Method B groundwater value (from the CLARC table)?</p> <p>Identify any laboratory analytical procedures that cannot meet MTCA Method B cleanup values.</p>	Indicate if current laboratory techniques cannot meet any MTCA Method B (CLARC) value for site-specific COPCs.			

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Item 71 P: A-1 S: Table A-1 L:	Provide where carbonate analysis is. This is needed to complete the suite of major anions to conduct Stiff diagrams. Include analysis of carbonate. Include the analysis for hexavalent chromium.	Provide requested information			
Item 72 P: A-15 S: Table A-4 L:	Add hexavalent chromium to the list of analytes.	Provide requested information			
Item 73 P: A-16 S: A2 L:	Provide why HASQARD is not cited. It is provided in Appendix A of DOE/RL-2008-58, Draft Rev. 1 or Appendix A of this plan's Appendix C. Provide the level of QA/QC for this report.	Revise text			
Item 74 P: S: Appendix C L:	See comments submitted on DOE/RL-2008-58, Draft Rev. 1 for additional comments related to Appendix C.	See comment			