

**START**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

September 20, 1993

Mr. Steven H. Wisness  
U.S. Department of Energy  
P.O. Box 550 MSIN: A5-15  
Richland, WA 99352-0550



Dear Mr. Wisness:

Re: First Notice of Deficiency 100-D Ponds Closure Plan, Revision 0, (dated March 1993, received February 26, 1993), (D-1-1, M-20-40)

This letter transmits the Washington State Department of Ecology's First Notice of Deficiency (NOD) on the 100-D Ponds Closure Plan, Revision 0 (dated March 1993). The deficiencies were generated during a review of the closure plan's compliance with final facility standards in the State Dangerous Waste Regulations (Chapter 173-303 WAC).

During the September 8, 1993, 100-D Ponds Unit Managers' meeting, it was explained that the ground water comments of the NOD regarding Chapter 5.0 of the closure plan would be directed to the RCRA Geohydrology Section of the Geosciences Group to be addressed. If this understanding is correct, please note that additional NOD comments regarding groundwater, other than those made for Chapter 5.0, are found throughout the NOD.

During the review of the 100-D Ponds Closure Plan, a RCRA/CERCLA integration effort was identified. Although the effort is commendable, it is apparent that RCRA requirements of WAC 173-303 would not be satisfied by implementing a plan which defers decontamination confirmation and post-closure requirements to another program. Many of the attached deficiencies address this issue and will be required to be corrected prior to the approval of the closure plan.

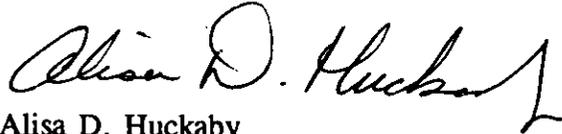
In accordance with the review time periods for RCRA closure plans, established by the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), please respond to the attached deficiencies with a NOD Response Table no later than December 20, 1993.

9473293-3836

Mr. Steven H. Wisness  
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If you or your staff have any questions or concerns regarding this notice, please contact me at (509) 736-3034.

Sincerely,



Alisa D. Huckaby  
Nuclear and Mixed Waste Management Program

AH:sr

cc: (w/ enclosure)  
Bob McLeod, DOE  
Dan Duncan, EPA  
Doug Sherwood, EPA  
Scott Luke, WHC  
Administrative Record, H6-08

cc: (w/o enclosure)  
Cliff Clark, DOE  
Randy Krekel, DOE  
Sue Price, WHC  
Fred Ruck, WHC

9413293-3857

**100-D PONDS CLOSURE PLAN REVISION 0, MARCH 1993, DOE/RL-92-71**  
**FIRST NOTICE OF DEFICIENCY**  
**September 20, 1993**

**DEFICIENCY NUMBER****DEFICIENCY**

1. Part A Forms Section. Please provide a copy of Revision 1. A copy of Revision 2 has been located and is not needed.
2. 1-1/34-35. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the description that the unit is being permitted under WAC 173-216.
3. 1-1/48-52 and 1-2/1-14. It is stated that "the proposed closure strategy is clean closure to be based on the analytical results of pond characterization sampling that is already complete." Closure for this unit will be conducted in accordance with WAC 173-303. Specifically, WAC 173-303-610(ii) requires that the unit be closed in such a way that a dangerous waste and dangerous waste constituents be controlled, minimized or eliminated to prevent escape of contaminants, leachate, contaminated run-off, or degradation products to the ground, surface water, ground water or the atmosphere. As this is a land based RCRA unit, designed for disposal with an estimated inventory disposed at the unit, "analytical results of pond characterization sampling" will be insufficient to achieve closure in accordance with WAC 173-303. Delete the above referenced proposal. In addition, it should be noted that WAC 173-303-610(2)(iii) and 173-303-650(6) require removal or decontamination. During closure of the unit, it must be shown that all applicable medias and equipment/accessories associated with the unit have been removed or decontaminated to the standards of WAC 173-303-610(2).
4. 1-2/14-17. It is inappropriate to defer associated cleanup/closure activities related to this RCRA unit to remediation being conducted by another unit and another program. As RCRA/CERCLA integration guidance is unavailable at this time, addressing the proposed closure activities associated with this RCRA unit will be conducted in accordance with WAC 173-303, where applicable. Delete the statement.
5. 1-2/17-19. Define "remediation" as used in the context of closure. If compliance monitoring requirements are imposed related to ground water contamination, it is inappropriate to defer such activities. Similarly, if removal

of contaminated wastes, residues, leachates, etc. is necessary to achieve closure, it is inappropriate to defer such activities. The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) provides for a simultaneous investigation of ground water contamination for RCRA TSD units and CERCLA operable units. The reviewer interprets this provision (Volume 1, page 3-3) to address ground water contamination and ultimately corrective action(s) associated with the units. It is inappropriate to defer decontamination verification activities related to the RCRA TSD to another program. Delete or modify the statement.

6. 2-1/47-50. Please confirm that what is stated in the parentheses is consistent with the latest version of the Revised Draft Final Permit For the Treatment, Storage and Disposal of Dangerous Waste. In particular, confirm that the definition is consistent with the legal and physical description as set forth in Attachment 2 of the draft permit. It is recommended that the above referenced definition be cited.
7. 2-2/22-27. As the unit has been utilized as a RCRA hazardous waste treatment and disposal unit since 1977, the pond influent piping and any dangerous waste constituents associated with the treated and disposed wastes contained within the influent piping or the surface impoundments (including unexcavated ash serving as the impoundment lining, if applicable) is subject to RCRA TSD requirements and is within the scope of this closure plan. Delete the paragraph.
8. 2-2/37-42. A bottom sealing problem is described to have prompted the division of the pond by the construction of a dike. Is there any indication that influent may have exceeded the capacity of the ponds? Similarly, has pond sediment/sludge been dredged at any time? In addition, it is requested that all existing aerial photographs which include the 100-D ponds unit be made available to the Ecology Unit Manager for review.
9. 2-2/37-42. During the construction of a dike and sloping walls, where did the material used for construction come from? From the description of the north pond on page 2-3, lines 5-8, it appears that the north pond is approximately six feet deeper than the south pond.
10. 2-4/9-11. Ash is described as being visible in the soil of the percolation pond. How has this blackened material within the percolation pond been differentiated from waste disposed or treated within the unit?
11. 2-4/24-29. As indicated by Figure 2-3, and as noted during a July 27, 1993, site visit, the ponds are located north of the perimeter fence and are not secured by a 24-hour surveillance system or an artificial or natural barrier which completely surrounds the unit as required by WAC 173-303-310(2). Milestone M-21-00 of the Tri-Party Agreement required the submittal of an interim status compliance assessment for the 100-D Ponds by March 31,

1989. The assessment, entitled "Final Draft Resource Conservation and Recovery Act Interim Status Assessment of Thirteen Facilities," (WHC-EP-0257) identifies the required action of erecting a barrier around the facility and the posting of signs visible from all approaches and a scheduled compliance date of July 31, 1989. It is the reviewer's understanding that an agreement was made to allow for wire roping erected around the unit and postings to suffice for the above referenced requirement. An attempt to find the documentation of such an agreement in the Administrative Record was unsuccessful. If documentation exists, please provide copies of the documentation. It is also the reviewer's understanding that additional administrative controls (postings) are in place along the river. If this is correct, please include a description of any additional administrative controls in place to prevent unauthorized entry to the unit. Lastly, during a July 27, 1993, site visit, two of the five placards (stating "RCRA Waste Site -- Do Not Disturb") were noted on the ground. Please reattach the placards to the wire roping.

12. 2-4/31-35. Please confirm if this is currently the security maintained at the 100 D and DR Areas. If not, modify the description accordingly.
13. Diagram(s)/Plan(s). The closure plan does not include a detailed diagram or plan of the pipes that carry/carried liquid effluent from individual facilities/buildings to the 100-D Ponds. A detailed description of the steps needed to remove or decontaminate all dangerous waste residues and contaminated containment system components, equipment, structures, and soils during closure is required by WAC 173-303-610(3)(a)(v). Although Figure 2-2 establishes the connection of buildings 190-DA, 189-D, 185-D, 183-D, 182-D, 190-D and 1724-DA to the unit, it does not include the detail required to evaluate how these pipes will be closed in relation to the closure of the 100-D Ponds. Submit the diagrams or plans with the next revision of the closure plan.
14. Chapter 2.0. A detailed description of the ash disposal basin which provides a description of elevational contouring has not been included in the closure plan. In addition, Chapter 2.0 does not include descriptions of information obtained from the geologic logs available for wells installed within the area, descriptions of materials (soil, sand, gravel, ash, etc.) visually noted at the unit, descriptions of conditions encountered during sampling events (sediments, hardpack, etc.), etc.
15. Figure 2-3. During a visit to the unit on July 26, 1993, it was noted that a mound of material exists within the northern pond/basin on the western end of the basin. Without identifying elevational contours, it cannot be determined if the contours of Figure 2-3 are drawn correctly, but it appears that the mound is not accurately reflected on the figure. Also, as the elevations of the ground surface of ground water monitoring wells have been

surveyed as well as the ground surface on the top of the hill located along the eastern edge of the unit, additional information of the surrounding elevations is requested to better understand the ash and gravel contact(s) associated with the unit.

16. 3-2/40-42. It is inappropriate to make a statement such as this without providing a detailed description of how the determination would be made between contamination resulting from past practice activities and TSD operation activities. Due to the design of the 100-D Area process sewer system, all materials directed to the 100-D ponds (upon initiation of the surface impoundment as a RCRA TSD unit) are subject to be decontaminated or removed in accordance with WAC 173-303-610 standards. Due to the lack of documentation of materials directed to the sewer system, 40 CFR 264 Appendix IX constituents will be required to be evaluated for closure. Therefore, unless it can be proven that 40 CFR 264 Appendix IX constituents were not directed to the unit, delete the sentence and modify the closure plan accordingly to reflect that 40 CFR 264 Appendix IX constituents will be evaluated during closure of the RCRA unit for decontamination or removal. In addition, it should be noted that even though pond influent piping and coal ash may have predated the unit as a RCRA TSD, the unit (including ancillary equipment and underlying materials constituting surface impoundment sides or bases) will be closed in accordance with WAC 173-303-610 due to the unit's usages as a RCRA TSD unit.
17. 3-2/47. Delete the wording which indicates that mercury as a potential contaminant in the unit is a "past practice constituent." For the reasoning described above under comment 3-2/40-42, mercury and other 40 CFR 264 Appendix IX constituents will be considered RCRA TSD constituents for purposes of closure.
18. 4-1/41. The sentence should read ". . . the 189D MDL occasionally discharged corrosive or previously neutralized corrosive effluents . . ."
19. 4-3/1-7. A detailed description of the ash disposal basin and the associated pond excavation has not been included in the closure plan. The brief description included on page 4-3 states that "[t]he quantity of coal ash actually remaining at the unit after excavation of the ash basin is indeterminate. This is because pre-excavation ash depths are unknown and therefore the 30 feet deep excavation may or may not have penetrated the ash basin's ash/soil barrier." A detailed description of the unit and surrounding coal ash contacts is requested. Figures 5-15 and 5-18 define the "approximate thickness of backfill in the 100-D Area." It is noted that no differentiation between backfill and fly ash is made. It is also noted that the 100-D Pond ground water monitoring well logs of Appendix 5A do not clearly distinguish "black sand," "gravelly sand" and "fly ash" to provide a differentiation between the backfill and fly ash. A detailed description of the unit and surrounding coal ash/backfill/soil/gravel/etc. contacts based upon visual inspection and any useable information such as that obtained from the geologic logs available for

wells installed within the area is requested. It should be noted that during a July 27, 1993 visit to the unit, the ash/gravel contacts noted across and through the ponds appeared to occur at the top of the ponds and to be dipping in a westerly direction. From visual inspection, it appears that the basins were excavated through the ash into underlying soil/gravel.

20. 4-3/22-24. Very little has been corroborated by the referenced previous pond water sampling. Considering percolation rates for the pond water, would any mercury be expected to be detected? It can be argued that the detection of mercury, as indicated by Table 4-4a, corroborates just the opposite. It is inappropriate to make this statement at this time without having sampled applicable medias where mercury would most likely be expected to be found. Delete the sentence.
21. Table 4-4a. The purpose of the table is questioned. Without knowing what the samples were subjected to during the EP toxicity analysis, the results cannot be interpreted to have significant meaning. In addition, for regulatory purposes, the sampling event represents the sampling of pond water that existed at one given time. There is not certification of the pond water being representative of the pond water typically directed to the unit. In addition, Chapter 2 establishes that inventory records for the unit and the seven buildings is limited or lacking altogether. Therefore, the results of Table 4-4a may represent the pond water at the time of sample collection, but conclusions cannot be drawn from the results to represent anything more.
22. 4-3/30-37. Delete the three sentences. The unit description of Chapter 2 establishes that the unit was connected to at least seven different buildings via piping. The unit description of Chapter 2 also establishes that inventory records for the unit and the seven buildings is limited or lacking altogether. The description of Chapter 3 also establishes that mercury contamination remaining in the piping could have been directed to the unit at any time.
23. 4-3/37-39. Delete the sentence. There is no need to explain why mercury was not added to the Part A Permit Application.
24. 4-4/15-18. The second paragraph of the Tri-Party Agreement, Section 6.3 states, "[t]he TSD units containing mixed waste will normally be closed with consideration of all hazardous substances, which includes radioactive constituents." Consequently, the focus of this closure is not limited to exclusively addressing the dangerous waste constituents. Because the dangerous and radioactive components of the wastes directed to this unit cannot be segregated, it is not feasible nor prudent to address the constituents separately. Delete the paragraph.

25. 4-4/39-42. Delete or rewrite the sentence. The unit description of Chapter 2 establishes that the unit was connected to at least seven different buildings via piping. The unit description of Chapter 2 also establishes that inventory records for the unit and the seven buildings is limited or lacking altogether. The description of Chapter 3 also establishes that dangerous wastes or dangerous waste constituents remaining in the piping could have been directed to the unit at any time.
26. 4-5/1-4. Delete the paragraph. The unit description of Chapter 2 establishes that the unit was connected to at least seven different buildings via piping. The unit description of Chapter 2 also establishes that inventory records for the unit and the seven buildings is limited or lacking altogether. The description of Chapter 3 also establishes that dangerous wastes or dangerous waste constituents remaining in the piping could have been directed to the unit at any time.
27. Chapter 5.0 and 5-1/12-15. Although ground water monitoring at the 100-D Ponds is stated to be conducted in accordance with the interim status ground water requirements of 40 CFR 265, Subpart F, 40 CFR 270.1(c) requires an equivalency determination. Also, Section 6.3.1 of the Tri-Party Agreement requires the documentation that ground water has not been adversely impacted by the unit as described in WAC 173-303-645. Therefore, the ground water monitoring program described in Chapter 5.0 should be upgraded to be conducted in accordance with the final facility status ground water monitoring requirements of WAC 173-303-645.
28. Chapter 5.0. The removal and decontamination to be achieved during closure of this unit must be demonstrated for ground water. The goal at closure is to leave no materials at the unit which require further care. By virtue of this unit being utilized for disposal, it is implied that wastes and/or residues will be remaining at the site. The goal at closure is to assure that these remaining wastes and/or residues are managed in a manner that protects human health and the environment. Therefore, it is important to demonstrate that ground water has not been adversely impacted by this unit. If it is found that this unit has adversely impacted the ground water (i.e., the closure performance standards of WAC 173-303-610 cannot be achieved), clean closure is not an option. The closure plan does not address this determination of options.
29. 5-1/17. Page xiii, lines 8-9, of the Part A Forms section indicates that the Part A, Form 3, addressing the 100-D Ponds, was originally submitted in August 1986. Provide a chronological history of the well monitoring program and explain why the monitoring program was not begun until 1991. Please include any applicable compliance schedules addressing the monitoring program.

30. 5-1/21. It is stated that the statistical comparisons of the indicator monitoring program "will be made." Upon revision of this plan, update the indicator monitoring program data and include the statistical comparison results. In addition, please provide an example of a statistical comparison which identifies which statistical method was utilized.
31. 5-1/22. The text correctly identifies that this phase of monitoring is commonly called "indicator evaluation" but incorrectly equates it to what is commonly referred to as "detection" monitoring. The referenced "detection" monitoring program is a similar program of 40 CFR 264.98. For the purposes of this closure plan, it is inappropriate to equate the two monitoring programs without showing that final facility standards of 40 CFR 264 or WAC 173-303 are met. Delete the phrase "or 'detection' monitoring."
32. 5-1/40-41, 5-2/44-52, 5-3/1-4 and Figure 5-1. The referenced items describe a ground water monitoring network comprised of the required one upgradient and three downgradient wells. The referenced item also propose to use the data generated from two wells for statistical comparison evaluations. In addition, Figure 5-1 shows well D8-5 installed approximately 500 feet away from the point of compliance. In addition, considering the ground water data and structural information of Figures 5-16, 5-17, 5-20 and Figures 4-10, 4-11 and 4-12 of "Groundwater Impact Assessment Report for the 100-D Ponds" (WHC-EP-0666), it is reasonable to conclude that ground water flow paths range from a northwesterly to a northeasterly direction. Therefore, the justification for the placement of well D8-5 is required. The justification may be presented in accordance with 40 CFR 265.90(c) or 265.91(a)(3). If the justification is not available or cannot be accepted, an additional well will be required to be installed at the point of compliance and to be utilized for statistical comparison purposes to fulfill 40 CFR 265 Subpart F requirements.
33. 5-2/25-27 and Appendix 5A. Please provide an explanation for the selection of 20-foot screen lengths.
34. 5-2/32-34. The referenced plan is required to be included within the closure plan and will be reviewed for approval when made available.
35. 5-2/35. The referenced item indicates that the laboratory analytical methods are "adapted" from "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods." Explain the referenced adaption. In addition, the method numbers identified in Appendix 5B are not familiar to the reviewer. Please equate the numbers of Appendix 5B to those of SW-846 test methods, if possible. It should be noted that any modifications to the required methods of WAC 173-303-110 should be submitted to Ecology in accordance with WAC 173-303-110 prior to their use.

36. 5-2/36-38. A description of procedures for ground water sample collection and "field chemical" measurements is required to be included within the closure and will be reviewed for approval when made available.
37. 5-2/44-45. Depending upon the resolution of the placement of well D8-5, the monitoring frequency may be subject to change.
38. 5-2/46, 5-5/15-19 and Table 5-2. From the analytes identified on Table 5-2, it appears that additional analytes are currently being monitored than are required for the 40 CFR 265.92 program. If the additional analytes are being monitored to satisfy WAC 173-303-645 program requirements, please describe the program as such. In addition, Appendix IX constituents will be required for closure decontamination verification purposes for other medias and are also appropriate for ground water. The program should include a mechanism for Appendix IX sampling for parameter selection and decontamination verification. In addition, the Appendix IX sampling results of other applicable medias related to the unit should also be utilized for parameter selection.
39. Table 5-2. After parameter selection for ground water decontamination verification monitoring, the parameters of Table 5-2 (total organic carbon, total organic halogen, coliform bacteria, phenols, etc.) should be evaluated. If certain parameters are to be monitored in lieu of others, the substitutions should be specified as well as an explanation of how the parameters are to be utilized (i.e., statistical comparisons or levels).
40. 5-3/6-9. Please provide a copy of document # WHC-CM-7-7.
41. 5-3/29-33. Please provide a copy of document # WHC-SD-EN-DP-043.
42. 5-3/29-33. The data for calcium carbonate content is difficult to read from the prepared well logs of Appendix 5A. Please provide sample analyses data. Also, the calcium carbonate data was noted to vary widely. Please provide an interpretation of the data.
43. 5-3/35-38. Please provide a copy of the geophysical logging interpretation, if available.
44. 5-3/40-45. The wells were described to have been developed using different methods. Please provide an explanation. In addition, please provide turbidity results measured to date.
45. 5-4/1-2. Please provide a copy of document # WHC-SD-EN-DP-043.

46. 5-4/18-21. The clarification of which monitoring program will be implemented at which time is required. For purposes of closure, a ground water monitoring program of 40 CFR 265, Subpart F is required. For purposes of an equivalency determination and as provided by the TPA, a ground water monitoring program of WAC 173-303-645 is required.
47. 5-4/21-22. A description of procedures for ground water sampling protocols and analytical methods is required to be included within the closure plan and will be reviewed for approval when made available.
48. 5-4/47. Change the wording from "detection level" to "indicator evaluation."
49. 5-4/49. As stated above, 40 CFR 265.91 requires three downgradient wells unless 40 CFR 265.90(c) or 265.91(a)(3) is(are) demonstrated. Modify this, if necessary, when the issue is resolved.
50. 5-5/1-5. If WAC 173-303-645 standards are to be achieved through this closure document, describe the standards and identify the detection and compliance monitoring program.
51. 5-5/10-11. The referenced item indicates that samples have been collected since late 1991, but Appendix 5B does not appear to indicate any sample collection dates in 1991. Please clarify the discrepancy.
52. 5-6/7-11. The referenced item is noted with interest. At this time, it is assumed that the initial year of background data collection has been completed as well as an additional semi-annual sampling event. As the pH measurements are stated to be measured in the field, please provide the data with the NOD response. In addition, please explain why this parameter is measured in the field.
53. 5-6/13-17. Please explain why this parameter is measured in the field.
54. 5-6/19-34. Describe the status of the audit and data evaluation investigation. Also, identify the available ground water monitoring options in the event the data cannot be utilized.
55. 5-7/3-4. Delete or qualify the statement. Currently, the statement is not qualified in any fashion (i.e., there is no description of filtering equipment/methods, no reference to studies conducted under similar conditions which make this conclusion, etc.).

56. 5-7/11-13, Table 5-2 and Appendix 5B. Constituents appearing on Table 5-2 are not reflected in Appendix 5B to have been analyzed. For example, Table 5-2 indicates that antimony, beryllium, cadmium, cobalt, copper, tin, vanadium, etc. are to be analyzed, but, Appendix 5B does not indicate that they were. If Appendix 5B does not include the data due to the detection concentrations occurring below CRQLs, please indicate this in the text.
57. 5-7/42. Delete or qualify the statement.
58. 5-8/4-5. Delete or qualify the statement.
59. Figure 5-4. A 100D - 100DR areas and well map generated on August 9, 1993, by an Ecology Geographic Information Systems (GIS) Specialist indicates that additional wells exist. For example, additional wells D3-1, D2-3, D2-2, D2-1, D5-1, D-2, D5-22, D-1A, D5-25, D5-24, D5-23, D5-6, etc. are identified. Please update Figure 5-4 and include all wells.
60. 5-10/43-44. Please identify which document, wells, or data the statement is referencing.
61. 5-10/33. The referenced interpretive "plume" of ground water may also be due to the structure and an associated contaminant dilution factor, as can be interpreted from figures 5-16, 5-17 and 5-20. Either include the additional interpretation or delete the allusion to the artificial recharge from the 100-D ponds being less contaminated than surrounding ground water. When data exists to better substantiate or confirm either (or both) interpretation(s), it is appropriate to include such information.
62. 5-21/35. Considering the ground water data and structural information of Figures 5-16, 5-17, 5-20 and Figures 4-10, 4-11 and 4-12 of "Groundwater Impact Assessment Report for the 100-D Ponds" (WHC-EP-0666), it is reasonable to conclude that ground water flow paths range from a northwesterly to a northeasterly direction. Modify the text accordingly.
63. Figure 5-20. Please include the river level elevation for July 1992.
64. Additional Figures. From the water level measurements of Appendix 5C, it appears that additional water table contourings can be made. Due to the varying ground water flow directions in the vicinity of the 100-D Ponds, and the unit's proximity to the river, additional contourings are requested. At a minimum, contourings for July, August, September, and October 1992 are requested to be generated. During generation of the contourings, please include river level elevations.

65. 6-1/12-14. Delete the referenced statement. It is inappropriate to defer post-closure monitoring requirements related to a RCRA unit to another program. If "clean closure" cannot be achieved, a post-closure plan and a RCRA Part B permit application will be required to be submitted pursuant to WAC 173-303-610(7), 610 (8) and WAC 173-303-650(6) and should be stated as such in the closure plan.
66. 6-1/14-16. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
67. 6-1/18-20. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
68. Figure 6-1. Revise the figure to reflect the requirements of WAC 173-303. For example, the sampling and analysis/data evaluation action should reflect a characterization action. Also, the "expedited response" term is neither defined within the closure plan, nor within WAC 173-303 and therefore should be deleted. Similarly, although the term "protective closure" is defined by the closure plan, it is not defined within WAC 173-303. Therefore, delete the ovals and the term. Delete all references to RCRA past practice actions within the figure to reflect only those actions relating to the closure of this RCRA unit. Also, delete the term "health-based levels." This term may be substituted, where appropriate, with Model Toxics Control Act (MTCA) cleanup levles, if applicable.
69. Footnote on Figure 6-1. The draft permit for the treatment, storage, and disposal of dangerous waste for the Hanford facility may contain a condition(s) addressing the utilization of Hanford Sitewide background data. If the permit is effective prior to the approval of this closure plan, and if the condition allows for the usage of this particular data, the footnote is acceptable. Otherwise, delete or modify the definition of "background."
70. 6-2/26. Delete the acronyms "RFI/CMS." Within the RCRA program the "RFI" acronym represents "RCRA Facility Investigation" for which there is a specific usage and definition associated. The definition of RFI is available upon request. Similarly, the "CMS" acronym represents "Corrective Measure Study" for which there is a specific usage and definition associated. The definition of CMS is available upon request. The referenced usage is currently incorrect.

71. 6-1/29. Although the term "action levels" is defined within the closure plan as "concentrations of analytes of interest that prompt an action . . ." the term is not defined by WAC 173-303. As the closure plan addresses a RCRA unit, and to avoid confusion on this subject, delete the "action level" phrase. It should be noted that a definition for "cleanup level" is provided by WAC 173-340-200 which may be utilized by reference of proposed WAC 173-303-610 (scheduled to be promulgated in December 1993 to amend WAC 173-303-610 to include WAC 173-340-200).
72. 6-1/29. The ambiguous term of "contaminants of concern" is not appropriately defined for the function of this document. Delete the statement. A term such as "waste constituents" may be considered for substitution.
73. 6-1/28-31. It is proposed to evaluate characterization sampling results to "determine the absence or presence of contaminants." It is indicated in the Part A application that the unit was utilized for disposal. It is also indicated in Chapter 4 that estimates of "contaminants" have been made to identify "waste inventory." If decontamination by removal has not occurred, for purposes of the closure of this unit, it will be assumed that disposal has occurred. Therefore, revise the statement qualifying that sample analysis results will be evaluated to determine the absence or presence of contaminants within the pond characterization samples. It should be noted that prior to closure, the pond water (if present), sediments, sludges (if present), soils, leachate (if applicable), and ground water must be evaluated to determine if "removal or decontamination" has occurred.
74. 6-1/31-33. Delete the sentence. Closure standards for RCRA units are found in WAC 173-303-610. This cite quite clearly requires removal or decontamination.
75. 6-1/35-36. Delete or modify the sentence. If modifying the text, include and cite background or MTCA as the closure performance standard, if applicable.
76. 6-1/36-42. Delete or modify the referenced item. If the description is to be modified, include and cite background or MTCA as the closure performance standard, if applicable. References to "health-based" levels must be corrected and specified as background or MTCA levels, if applicable.
77. 6-1/44-46. Delete the sentence as the cited methodology has not been approved for usage at RCRA units for purposes of closure.

78. 6-1/46-52 and 6-2/1-3. Modify this description referencing MTCA, if MTCA standards are to be utilized, if applicable. Correct the descriptions of variables, as appropriate. Also, specify that the MTCA database is updated periodically, and that the cleanup levels will be based on values that are current at the time of approval of this closure plan, if applicable.
79. 6-2/28-30. The proposed strategy as described in Section 6.1 of the closure plan could be interpreted as an action of abandonment rather than one of decontamination or removal. As previously stated, during closure of the unit, it must be shown that all applicable medias and equipment/accessories associated with the unit have been removed or decontaminated to the standards of WAC 173-303-610(2). Delete the sentence.
80. 6-2/30-33. The sentence, as written, would indicate that clean closure had not been achieved if contaminated soils or water, exceeding the standards of WAC 173-303-610(2), are left in place. Also, as stated earlier, the usage of the "RFI/CMS" acronym is incorrect. Also, as stated earlier, it is inappropriate to defer post-closure requirements to another program. Delete the sentence and replace it with a statement how compliance with WAC 173-303-610(7) and 173-303-650(6) will be achieved.
81. 6-2/45-48. Delete the bullet and replace it with a statement that, where applicable, all applicable contaminated medias and equipment/accessories associated with the unit will be removed or decontaminated to the standards of WAC 173-303-610(2).
82. 6-3/6-10. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
83. 6.3/First Bullet. Include a statement that, where applicable, all applicable contaminated medias and equipment/accessories associated with the unit will be sampled to determine if decontamination has occurred, or if removal is necessary. As discussed under the comment on Section 7.3.8, a typical function conducted during the closure of a surface impoundment is to identify the maximum extent of contamination prior to the implementation of an approved closure plan. It should be noted that the referenced previous soil and water sampling, as described in Chapter 7.0, will be insufficient to achieve the extent of contamination determination and the decontamination verification.
84. 6-3/24-26. Specify that samples will be analyzed in accordance with WAC 173-303-110.

85. 6-3/30-31. Change the term "action level" to that of "cleanup levels" or "background," whichever approach is to be utilized.
86. 6-3/31. Change the term "contaminants of concern" to "waste constituents."
87. 6-3/32-33. Change the wording "further remediation" to "decontamination or removal."
88. 6-3/38-45. Define what is meant by "imminently hazardous to human health or the environment." Also, identify which regulatory agency would be notified for guidance.
89. 6-3/48-49. Change the term "action level" to that of "cleanup level" or "background," whichever approach is to be utilized.
90. 6-3/47-49. Add to the statement that, where applicable, all applicable contaminated medias and equipment/accessories associated with the unit will be removed or decontaminated to the standards of WAC 173-303-610(2).
91. 6-3/49-50. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
92. 6-3/51-52. Add to the sentence a qualifier that groundwater monitoring initiated specifically due to the 100-D Ponds will continue until such time after closure activities are completed as is necessary to verify that the ground water has not been contaminated or that the decontamination or the removal of waste constituents from ground water has occurred.
93. 6-4/1. Change the term "action levels" to that of "cleanup levels" or "background," whichever approach is to be utilized.
94. 6-4/5-6. Describe in detail how it would be determined that the contamination is from 100-D Ponds only. If the determination is not definitive, delete the sentence.
95. 6-4/7-9. Identify which WAC 173-303 regulation would allow certification of closure with wastes/waste constituents remaining above WAC 173-303-610(2) standards. If one cannot be identified, delete the sentence. In

addition, during a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.

96. 6-4/18-21 and 6-4/27-30. Describe in detail how it would be determined that the contamination is from "RCRA past practice activities in addition to 100-D Ponds TSD unit activities." Due to the lack of documentation of materials directed to the sewer system, 40 CFR 264 Appendix IX constituents will be required to be evaluated for closure. The referenced demonstration may be attempted, but, it should be noted that it is due to the lack of documentation that justifies Appendix IX decontamination verification and an acceptance of such a demonstration would require the documentation that is reported not to exist. It should also be noted that if soils are contaminated with the waste constituents, of Appendix IX, it is appropriate to pursue decontamination or removal of those constituents through the RCRA closure process. If contaminants are identified through the closure process of which cannot be proven to have been directed to or placed within the surface impoundment, it is appropriate to notify the CERCLA program that the contaminants have been identified.
97. 6-4/21-25. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
98. 6-4/33. Change the word "soil" to "media and/or equipment/accessories."
99. 6-4/34-35. Delete "coordinated with the 100-DR-1 Operable Unit RFI/CMS process" and insert "conducted in accordance with WAC 173-303-610 and 173-303-650."
100. 6-4/37-38. Cite WAC 173-303-610(6) stating that certification will be accomplished in accordance to the referenced item. In addition, include a provision that the independent professional engineer will be registered in the State of Washington.
101. 6-4/44-45. In reference to a November 3, 1992, letter signed by Paul Day of the U.S. Environmental Protection Agency (EPA), it is the reviewer's understanding that EPA may elect to participate during the development of the closure plan. If this is the case, it is recommended that EPA be afforded every opportunity to participate prior to Washington State Ecology's approval of the closure plan.

102. 7-1/5-8. It is stated that ". . . this chapter provides specific field sampling and laboratory analytical procedures that will be applied in identifying soil contamination (if any) originating from the operation of the 100-D Ponds TSD unit." In addition to an evaluation of soil contamination, an evaluation of all other medias and equipment/accessories present and related to the unit is required. The evaluation is required to determine what associated with the unit must be decontaminated or removed. Re-state the sentence to include provisions to evaluate all other applicable medias and equipment/accessories associated with the unit. In addition, the re-statement should include ground water as a media to be evaluated.
103. 7-1/8-11. It is inappropriate to defer associated corrective action monitoring requirements related to the post-closure of this unit to activities to ground water activities to be completed for another unit and another program. The Tri-Party Agreement provides for a simultaneous investigation of ground water contamination for RCRA TSD units and CERCLA operable units. The reviewer interprets this provision (Volume 1, page 3-3) to address ground water contamination and ultimately corrective action(s) associated with the units. Furthermore, the reviewer does not interpret this provision to allow the deferral of post-closure requirements to another program. Delete the sentence.
104. 7-1/11-14. When validated, the analytical results will be used as characterization information. The results cannot be accepted at this time to be used for confirmation of clean closure. A preliminary review of analytical parameters of Table A-1 of Appendix A indicates that not all 40 CFR 264 Appendix IX constituents were sampled for. In addition, all medias and equipment/accessories present, and related to, the unit are required to be removed or decontaminated in accordance with WAC 173-303-610. Delete the sentence or modify accordingly to indicate that the validated data will be used for unit characterization.
105. 7-1/17-20. For purposes of unit characterization, the pond soil and water sampling activities will be utilized within the closure plan. The pond soil and water sampling activities and results do not fulfill the requirements of WAC 173-303-610 and cannot be utilized by themselves to satisfy as confirmation of clean closure. The closure strategy of Chapter 6.0 clearly indicates a lack of understanding of the requirements of WAC 173-303-610 and cannot be interpreted to fulfill RCRA closure requirements. The sentence should reflect that the sampling activities and resulting generated data were completed for unit characterization purposes.
106. 7-1/29-31. The sentence should indicate that the corrosive wastes may have contained dangerous waste constituents. In addition, a sentence should be added which indicates that other dangerous wastes and/or dangerous waste constituents may have been directed to the ponds via piping connected to buildings 190-DA, 189-D, 185-D, 183-D, 182-D, 190-D and 1724-DA.

107. 7-1/29. The sentence should read ". . . the 100-D Ponds received corrosive or previously neutralized corrosive wastes . . . ." Delete the word "potentially."
108. 7-1/32-34. Due to the piping connection to seven buildings and the lack of records, the statement that the ponds have received no corrosive or dangerous waste constituents since 1986 cannot be substantiated. Delete the sentence.
109. 7-1/34-36. During a Unit Manager's meeting on July 1, 1993, it was explained that a decision had recently been made to discontinue usage of the 100-D Ponds. If this understanding is correct, delete or modify the referenced sentence accordingly.
110. 7-1/38-40. The statement does not accurately reflect the disposal process for which the unit was utilized. Although no recorded documentation may exist that dangerous waste constituents were deposited directly into the ponds, there is evidence that dangerous waste constituents were directed and discharged to the ponds. An evaluation of the chemical reaction of the hydrochloric acid, sulfuric acid, and sodium hydroxide utilized to regenerate the three demineralizers, would reflect the generation of constituent-laden acids/bases. A further evaluation of the chemical reaction of the neutralization of such constituent-laden acids/bases would reflect the generation of constituent-laden precipitates.
111. 7-1/40. The sentence should read ". . . the corrosive or previously neutralized corrosive wastes . . . ." Delete the word potentially.
112. 7-1/45. Delete or define the term "in minute quantities."
113. 7-1/48-50. The purpose of the closure plan is to demonstrate and document closure by removal or decontamination. Therefore, the closure plan must demonstrate and document that all medias and equipment/accessories present and related to the unit have been removed or decontaminated. Delete the sentence.
114. 7-2/1-3. Without identifying which contaminants are of concern, the statement is meaningless. In addition, without identifying the "dangerous levels" of those dangerous waste constituents, the statement is meaningless. Delete the sentence.

115. 7-2/5-8. Delete the paragraph. Insert a paragraph stating that if sampling results of all medias and equipment/accessories present, and related to the unit, are contaminated, removal or decontamination will occur to those performance standards of WAC 173-303-610.
116. 7-3/12-15. The surface phase of soil sampling is described as occurring from the surface to three feet deep. Lines 33 and 34 describe extracting the sample material from the "top one foot of hardpack." Figure 7-2 contours the settling pond sediment depth of which it appears that at least two samples (numbers 5 and 6) may have been collected from "hardpack" occurring deeper than three feet. Clarify the discrepancies.
117. 7-2/13-20. The section should include a description of the precipitation of dangerous waste constituents associated with the neutralized corrosive wastes. In addition, there should be a description of the unit's connection to seven buildings and the potential discharge of dangerous waste or constituents to the unit. In addition, the section should include a description of sludge, sediment, soil, ash, etc. associated with the ponds. In addition, the section should include a description of effluent, ash, sludge, etc. associated or remaining within the unit's piping.
118. 7-3/34. The term "hardpack" is used to describe the location of sediment sampling without defining the term. Define the term. In addition, if the term is describing a "layer," the continuity of the layer should be described.
119. 7-3/25-27. From the contouring of the settling pond sediment of Figure 7-2, it appears that the influent sampling location (location number 7 of Figure 7-1) is one of the two most shallow sediment depths. It does not appear (from Figure 7-1) that a sample was collected from near sediment depth measurement number 4. Considering the possible effluent discharge rates, under high flow rates of discharge, the deposition of influent most heavily contaminated with insoluble or quickly precipitated constituents may not have occurred at nonrandom sample location number 7. Identify if this concern was evaluated.
120. 7-3/24-25. Identify/describe how the influent point of the northern pond (percolation pond) was selected for sample number 7.
121. 7-3/28-29. Provide a description of how the random sample locations were selected. It appears from Figure 7-1 that if the settling pond were divided into four quadrants, the southeastern quadrant was not sampled.
122. Figure 7-1. It appears that no samples were taken of the mounded material in the western end of the northern pond (percolation pond). This material must be identified and evaluated during closure of the unit.

123. Figure 7-1. It appears that no sediment or sludge samples were taken from the northern pond (settling pond), but rather, that samples were collected directly from the "hardpack." Please provide the rationale for this sampling approach.
124. 7-3/41-42. The sentence should read "[A]ppendix A, Table A-4 provides the list of analytes sampled." For closure of this unit, decontamination confirmation will be required for 40 CFR 264 Appendix IX constituents.
125. 7-3/42-44. Delete the sentence. Due to the lack of records and the piping connection to at least seven buildings, it is appropriate for decontamination confirmation to include 40 CFR 264 Appendix IX constituents.
126. 7-3/44-47. Delete the sentence. For closure of this unit, decontamination confirmation will be required for 40 CFR 264 Appendix IX constituents.
127. 7-4/45. The sentence indicates that soil and sediment samples were collected in both ponds. The description of Section 7.3.4 indicates the collection of "firm subsurface soil" after the sampling device was pushed through the sediment. As it is unknown if sludges exist at the bottom of the settling pond, the distinction between sediment and soil is important. Clarify the sentence.
128. 7-4/47-48. Does the sentence mean that RCRA SW-846 analytical methods were utilized to analyze 16 of the samples collected, or, does the sentence mean that a sample collection method identified in RCRA SW-846 was utilized?
129. 7-5/1-6. From the description of selecting sample sites in section 7.3.2, it appears that the paragraph is describing the sample collection procedures of the percolation pond. Specify which samples or pond the paragraph is describing.
130. 7-5/17. Change the portion of sentence from "analytes of interest specific to 100-D Ponds TSD unit operations and its appropriate analytical method" to "analytes sampled for and their appropriate analytical method."
131. 7-5/18-20. As decontamination confirmation for all medias and equipment/accessories present and related to the unit will include 40 CFR 264 Appendix IX constituents, delete the sentence.
132. Section 7.3.8. This section needs to be rewritten and relocated to occur after the decontamination and verification sections of this closure plan. Typically, the approach followed within a closure plan for a RCRA unit is to

describe in detail: 1) the unit (including descriptions of all medias and equipment/accessories present and related to the unit), 2) procedures to be performed to identify the maximum extent of contamination, 3) procedures to be performed to achieve decontamination or removal, 4) decontamination verification sampling procedures, 5) analysis of the data generated during decontamination verification sampling, 6) evaluation of need for further decontamination or removal procedures, etc.

133. 7-5/26 and 35. Assuming Section 7.3.8 is to be rewritten, the sentence should identify if a statistical and/or comparative (MTCA) evaluation will be performed. The inclusion of a detailed description of procedures for the evaluations is required by WAC 173-303-610(3).
134. 7-5/28. Assuming the section is to be rewritten, the sentence would more appropriately read ". . . further decontamination or removal and further decontamination verification sampling . . . . "
135. 7-5/31-33. As decontamination confirmation for all medias and equipment/accessories present and related to the unit will include 40 CFR 264 Appendix IX constituents, delete the sentence.
136. 7-5/40. Pond sediment is not the only media associated with this unit. Modify to include all medias and equipment/accessories present and related to the unit.
137. 7-5/44-45. Delete the sentence. No mechanism exists for testing the significance of a location which indicates contamination.
138. 7-5/47-49. During a July 27, 1993, site visit, the ash/gravel contacts noted across and through the ponds appeared to occur at the top of the ponds and to be dipping in a westerly direction. From visual inspection, it appears that the basins were excavated through the ash into underlying soil/gravel. If noted correctly, it is inappropriate to compare pond sampling results with ash pile sampling results, except in the case that the upper portion of the walls of the unit where the ash occurs is sampled. Considering comment under 4-3/1-7, if the ash/soil/gravel/etc. contacts associated with the unit cannot be established, it may be inappropriate to make the described comparisons. Modify the approach accordingly.
139. 7-5/47-52 and 7-6/1-4. Assuming Section 7.3.8 is to be rewritten, the approach should identify if a statistical or a comparative (MTCA) evaluation will be performed. A detailed description of the procedures to be followed for

the approach(es) selected should be included. Guidance regarding these approaches is provided in the Washington State Department of Ecology's "Guidance for Clean Closure of Dangerous Waste Facilities" (Draft) dated April 1993.

140. Section 7.3.8. In the rewritten Section 7.3.8, please include a provision to submit to the Ecology Unit Manager, copies of all analytical results with associated quality assurance/quality control information generated during closure sampling activities, including radiation surveys.
141. 7-6/11-13. It should be noted that the referenced analysis report will not suffice for certification of closure. It should also be noted that a period of ground water monitoring will be required after the completion of decontamination or removal activities associated with everything other than ground water. Upon completion of the ground water monitoring period, and if the ground water is not contaminated, certification of closure is appropriate.
142. 7-6/13-14. The sentence implies that a risk assessment will be developed to analyze the hazards associated with the unit. Neither existing WAC 173-303-610, nor proposed WAC 173-303-610, provide a mechanism for performing a risk assessment as part of closure. Delete the sentence.
143. 7-6/17. Delete the word "residue." Contamination may be substituted.
144. 7-6/19. Cite WAC 173-303-610(3)(v).
145. 7-6/29-31. Due to the lack of records, the piping connection to at least seven buildings, a characterization that did not address all medias and equipment/accessories present and related to the unit, and the non-existence of sampling data to substantiate the statement, delete the statement.
146. 7-6/35-37. Due to the lack of records, the piping connection to at least seven buildings, a characterization that did not address all medias and equipment/accessories present and related to the unit and the non-existence of sampling data to substantiate the statement, delete the statement.
147. 7-6/37-40. Delete the reference to WAC 173-340. The usage of WAC 173-340, if applicable, can be achieved through WAC 173-303-610.
148. 7-6/39. If the sentence is to remain in the closure plan, add ground water as a media.

149. 7-6/40-45. Delete the two sentences and insert a reference to the closure performance standards of WAC 173-303-610(2) indicating that all applicable contaminated medias and equipment/accessories associated with the unit will be removed or decontaminated.
150. 7-6/51-52 and 7-7/1-4. As recited in Section 7.4, the closure plan must include "[A] detailed description of the steps needed to remove or decontaminate . . . equipment, structures, . . . ." The decontamination or removal of the associated piping must be addressed in the closure plan, prior to the approval of the plan as the piping is considered part of the unit. In addition, during an August 11, 1993, Unit Manager's meeting, it was explained that all discharges to the unit may be ceased by March 1994. If this understanding is correct, delete or modify the referenced sentences.
151. 7-6/Additional Section. An additional section (7.3.10) should be included which will address the determination of extent/existence of contamination. The section should include all relevant elements of a plan to meet the objectives including a description of work, a description of medias to be sampled, a description of sampling methods, an identification of analytical methods, and laboratory analysis, etc.
152. Section 7.6. Delete the sentence. As stated above for Section 7.3.8, the section needs to be rewritten to include a description of : 1) decontamination verification sampling procedures, 2) analysis of the data generated during decontamination verification sampling, 3) evaluation of need for further decontamination or removal procedures, etc. In addition, a period of ground water monitoring will be required after the completion of removal or decontamination activities associated with everything other than ground water.
153. Section 7.6. In the rewritten section, please include that split or duplicate samples will be provided to Ecology upon request.
154. 7-7/9. Delete the words "monitoring or." A period of ground water monitoring will be required.
155. 7-7/10. The closure plan should include enough detail to allow for a description of activities to be performed. Delete the word "may."
156. 7-7/16 and 18. Descriptions of cap installation and maintenance are activities that are more appropriately described in the contingent closure plan within Section 7.7. Delete the bullets.

157. Section 7.6. Add an additional bullet which identifies removal or decontamination of wastes and/or sludges. Also, add an additional bullet to remove or decontaminate applicable piping. Also, add additional bullets to identify decontamination verification steps for all applicable medias.
158. 7-7/23. The correct WAC cite is WAC 173-303-650(6).
159. 7-7/33. During an August 11, 1993, Unit Manager's meeting, it was explained that all discharges to the unit may be ceased by March 1994. If this understanding is correct, delete the sentence.
160. 7-7/35. Delete the wording "as rapidly as practicable" and insert an action or activity that will trigger the referenced stabilization activities.
161. 7-7/41-42. Delete the phrase "following the 100-DR-1 operable unit RFI/CMS" and insert a description of what action or activity will trigger the referenced submittal of a final closure cover design.
162. 7-8/43-44. The proposal to utilize "soils native to the 100-D Ponds site and to the Hanford Site" for cover material is noted with interest. Also noted on page 4, lines 30-32, of the State Environmental Policy Act Environmental Checklist (included with closure plan), is a statement which identifies an intent for the majority of the fill material to come from the "berms located on the west, north, and east sides of the pond." To utilize the coal ash in this way, the material would first be required to be evaluated as suitable material. In addition, reusing the coal ash in this fashion may subject the use to the dangerous (hazardous) waste designation procedures of WAC 173-303-170(1). Under the Dangerous Waste Regulations, coal ash "may" designate for the solid corrosive characteristic (section -090(6)(a)(iii) or perhaps for a state criteria (sections -101 through -103). Evaluate this proposal. If the intent remains the same, include a description of steps to be taken to determine the suitability of the material. In addition, if applicable, include a description of steps to be taken to determine the suitability of any fill or cover material to be utilized.
163. Pages 7-8 - 7-15. Please identify what design criteria/source was utilized for the proposed cover. It should be noted that a recommended technical guidance document for cover designs is entitled "Final Covers on Hazardous Waste Landfills and Surface Impoundments" (NTIS PB89233480). Please confirm if the proposed is consistent with the recommended guidance.
164. Pages 7-8 - 7-15. If decontamination or removal (clean closure) is not attained, a RCRA cover should be designed and constructed with best available technology at the time of construction. If a cover is required, a detailed cover

design, including construction specifications, must be submitted to the Department of Ecology for approval prior to construction. Include a provision to submit the detailed construction specifications in the event that "clean closure" is not achieved.

165. 7-13/11-12. The statement that no wastes have been buried below the 100-D Ponds is not an accurate reflection of the usage of the ponds for disposal purposes. Either clarify the statement, or add another statement which reflects disposal.
166. 7-13/12-12. The closure plan does not address the possibility of the existence of wastes at the unit. In addition, due to the continued usage of the ponds, wastewater does exist. Therefore, consolidation and compression of wastes can occur by dewatering of wastes. Either clarify the statement, or add another statement which reflects that prior to closure, removal, or decontamination of existing wastes will occur. Also, clarify that in the event that closure in place is required, dewatering of the ponds will occur prior to the initiation of closure activities.
167. Section 7.8. Modify as necessary to incorporate any additional necessary training courses to achieve the decontamination or removal requirements associated with closure.
168. 7-15/12. Due to the number of necessary changes to the closure plan, a definition of "actual closure activities" is requested. If closure-related work is to be done prior to the approval of the closure plan, a clear identification of which activities will be performed through this plan is requested.
169. 7-15/21. Either delete the RFI/CMS acronym or write out the words "Remedial Field Investigations/Corrective Measures Study."
170. Figure 7-3. The closure schedule should be re-drawn to reflect the modifications that will be made to the closure plan.
171. Figure 7-3. Delete footnote number 1. The activities described in the closure plan do not meet the requirements of WAC 173-303, and cannot be approved as a "RCRA/TSD unit" integration.
172. Figure 7-3. Delete footnote number 2. As integration has not been achieved, the completion deadlines associated with the operable unit are not necessary within this document.

173. Figure 7-3. Modify the figure to reflect the schedule of activities only associated with the closure of 100-D Ponds. In addition, such activities should include conductance of a radiation survey, decontamination or removal to identified cleanup levels, decontamination verification sampling, analyze verification sampling, evaluate data, further decontamination or removal, decontamination verification sampling, etc.
174. Figure 7-5. Modify the dates and months to agree with the closure activities and dates that will be performed upon approval of the closure plan.
175. Section 7.11. Please include a provision to submit to the Ecology Unit Manager, a copy of any field logbooks generated in relation to closure of 100-D Ponds.
176. Chapter 7. The draft permit for the treatment, storage, and disposal of dangerous waste for the Hanford facility may contain conditions to address several items not addressed/included within the closure plan. Should the permit go into effect prior to the approval of the closure plan for this unit, the applicable conditions must be incorporated.
177. Chapter 7. Please include a provision that split or duplicate samples will be provided to Ecology upon request.
178. Figure 7-4. If the draft permit for the treatment, storage, and disposal of dangerous waste for the Hanford facility is finalized, in effect, and contains a condition requiring the certification to be signed by applicable permittees, Figure 7-4 will be required to be modified.
179. 7-16/7.11. Please cite WAC 173-303-610(6) in this section.
180. 8-1/17. If the draft permit for the treatment, storage, and disposal of dangerous waste for the Hanford facility is finalized, in effect, and contains a condition requiring the certification to be signed by applicable permittees, Figure 7-4 will be required to be modified.
181. 8-1/16. In addition to the regulation cited, please include WAC 173-303-610(10).
182. 8-1/28. The correct cite is 40 CFR 265.119.
183. 8-1/43. Change the cites from WAC 173-303-610(7)(d) and 40 CFR 264.117(c) to WAC 173-303-610(7) and 40 CFR 265.117, respectively.

184. 8-2/8. Delete the word residual.
185. 8-2/10-12. As the unit is utilized for disposal purposes, it can be argued that contamination is expected. Delete the wording "although not expected."
186. 8-2/13-15. Add a statement which reflects that, if applicable, post-closure care of the property will be conducted in accordance with WAC 173-303-610(7), 650(6) and 645. It should be noted that the RCRA requirements of WAC 173-303 must be satisfied and cannot appropriately be deferred to another program. As stated above under comment 1-2/17-19, the TPA provides for a simultaneous investigation of ground water contamination for RCRA TSD units and CERCLA operable units. The reviewer interprets this provision to address ground water contamination and ultimately corrective action(s) associated with the units. It is inappropriate to defer decontamination verification activities related to the RCRA TSD to another program. In addition, if corrective action is required (i.e., ground water monitoring indicates the disposal unit is the source of contamination), the corrective action requirements of WAC 173-303-645 will be imposed.
187. 8-2/15. Write out the words for the "RFI/CMS" acronym.
188. 8-2/24. Include that the data will also be used to comply with WAC 173-303-610, 650 and 645 requirements.
189. 8-2/42-45. Delete the sentence and specify that the postclosure inspection will continue until such time as is specified by WAC 173-303-610, 650 and 645.
190. 8-3/8.2.1.1. Please confirm if the described security controls have changed. Revise the description accordingly, if applicable.
191. 8-4/21-30. Specify that the ground water monitoring will be conducted under an approved, postclosure ground water monitoring plan, if applicable. Delete the description of the current ground water monitoring program.
192. 8-4/32-35. See comments under 5-1/12-15, 5-1/22 and Chapter 5.0. The ground water monitoring program which will be implemented should be described here.
193. 8-4/37-45. Cite WAC 173-303-645 and indicate that the ground water detection, compliance, and/or corrective action program(s) will be conducted in accordance with those requirements.

194. 8-5/24. Does the term "maintenance action" address minor and major erosion damage? Please specify which type of erosion damage will be initiated within the 90 day time period.
195. 8-5/25-27. In the event that repairs cannot return the site surfaces to predamaged conditions, specify that the postclosure plan will be amended in accordance with WAC 173-303-610(8)(d).
196. 8-5/8.2.3.3. In the event that field maintenance procedures are inadequate to correct ground water monitoring well problems, specify that the postclosure plan will be amended in accordance with WAC 173-303-610(8)(d).
197. 8-8/47. The legend should read "Danger - Unauthorized Personnel Keep Out."
198. 8-8/40-43. What time frame is the statement referring to? If sitewide controlled access requirements change prior to closure is the building of a fence being proposed? The statement is unclear.
199. 8-9/8.4. Please cite WAC 173-303-610(8) in this section.
200. 8-9/29-36. Please cite WAC 173-303-610(9) in this paragraph.
201. 8-9/38-40. Please cite WAC 173-303-610(10) in this paragraph.
202. 8-9/8.6. Please cite WAC 173-303-610(11) in this section.
203. Table 8-1. Indicate that well condition will be inspected each time the well is sampled (i.e., at same frequency of well sampling).

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