UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

DEC 14 2009

Reply To: OCE-164

Shirley J. Olinger, Manager
United States Department of Energy
Office of River Protection
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

Re: Approval of the Toxic Substance Control Act (TSCA) Risk-based Disposal Approval (RBDA) Application for the Mobilization of Single-Shell Tank Solid Waste Using Double-Shell Tank Supernatant – Phase II Approval for Tank 241-C-111

Dear Ms. Olinger:

This letter constitutes approval under the authority of 40 Code of Federal Regulations (CFR) 761.61(c) to manage certain polychlorinated biphenyl (PCB) remediation wastes in conjunction with single-shell tank (SST) retrieval, subject to conditions established below. The rationale of the United States Environmental Protection Agency (EPA) for establishing each of these conditions is contained in the Statement of Basis appearing as Enclosure 2 to this letter. This written decision for a risk-based method for disposal of PCB remediation waste is based on the United States Department of Energy Office of River Protection (Energy) application for a risk-based disposal approval dated November 19, 2004, as well as additional information provided to the EPA in support of this application as documented in the Statement of Basis. This approval constitutes the Phase II approval (as described in EPA's letter of December 9, 2004, from Michael A. Bussell to you and in the Statement of Basis for this approval) of the November 19, 2004, application for retrieval of tank 241-C-111. Energy is authorized to conduct only those retrieval activities related to tank 241-C-111 retrieval activities for which Phase II approval has been issued. Energy is precluded from conducting the remainder of the retrieval activities proposed in the November 19, 2004 application, pending associated Phase II determinations by EPA.

Enclosure 1 to this approval documents the administrative record that supports this determination. In granting this written approval, EPA finds that the proposed management of PCB remediation wastes for retrieval of wastes from specified single-shell tanks, subject to the conditions below, will not pose an unreasonable risk of injury to health or the environment. Energy shall ensure that activities conducted pursuant to this approval are in full compliance with conditions of this approval. The conditions of this approval are enforceable under TSCA and implementing regulations 40 CFR Part 761.61(c). Any actions by Energy which violate the terms and conditions of this letter may result in administrative, civil, or criminal enforcement by EPA in accordance with Section 16 of TSCA, 15 USC § 2615.

Phase II (Tank-Specific) Conditions – Tank 241-C-111

1. The spatial boundaries of this approval shall be the 241-AN-111 valve pit for supernatant retrieved from tank 241-AN-111, extending to (following the direction of supernatant/retrieved slurry flow) the retrieval SST, thence to the connection to the tank 241-AN-111 return riser in the 241-AN-06A pump pit for slurry returned from the retrieval SST. Tank 241-C-111 is explicitly included within the spatial boundaries of this approval. EPA may modify the spatial boundary defined by this condition or the requirements of this approval based on documentation required by this approval condition as necessary to ensure that activities subject to this approval do not pose an unreasonable risk of injury to human health or the environment.

2. All equipment used for carrying out retrieval activities external to tank 241-C-111 shall comply with the requirements of 40 CFR 265.191 through 196. Tank 241-C-111 proper and any equipment used for retrieval activities internal to this tank are excluded from this requirement. With respect to compliance with the requirements of 40 CFR 265.196 (response to leaks or spills, and disposition of leaking or unfit-for-use tank systems), Energy shall maintain and conduct retrieval operations according to procedures no less stringent than Sections 4.2.1.4, and 4.6.3 of the C-111 TWRWP, RPP-37739, Rev. 1.

3. Energy shall complete a formal waste compatibility assessment of wastes in tank 241-C-111 according to HNF-SD-QM-OCD-015 and Section 3.1.2 of the C-111 TWRWP, RPP-37739, Rev. 1, as approved by Ecology. Energy shall provide notice of availability of the waste compatibility assessment report to the EPA contacts listed in Phase I approval Condition 6 prior to the start of retrieval activities covered by this approval. Electronic mail communication is acceptable for this notification. Energy shall provide a printed or electronic copy of this report to EPA upon request.

4. Within 45 days following the effective date of this approval, Energy shall submit to EPA a post-retrieval Data Quality Objective (DQO) report and a sampling and analysis plan (SAP) for post-retrieval characterization and residual PCB remediation waste sampling for tank 241-C-111. These plans may be based in whole or part on closure requirements which Ecology may have established in the Hanford Dangerous Waste permit pursuant to Washington Administrative Code 173-303-610. Energy shall ensure that the DQO report and the sampling and analysis plan provide for generation of data characterizing residual PCB remediation waste adequate for purposes of evaluating the risk of injury to human health and the environment from residual PCB remediation waste, and for evaluation of appropriate removal, decontamination or disposal actions for such residual PCB remediation waste. This plan shall be based on and consistent with the requirements of TPA Appendix I Section 2.1.6 requirements.

5. Within 120 days following completion of retrieval activities covered by this approval, or other such time corresponding to a submission date approved by Ecology through applicable TPA administrative processes with respect to requirements of TPA Appendix I Section 2.1.7, Energy shall submit to EPA either a retrieval data report pursuant to the approved DQO/sampling and analysis plan required by Phase II Condition 4 above, or a TPA Appendix H request for exception. This report shall include the information required by TPA Appendix I Section 2.1.7.

6. Within 120 days following completion of retrieval activities covered by this approval, or other such time corresponding to a submission date approved by Ecology through applicable TPA administrative processes with respect to requirements of TPA Appendix I Section 2.2.1, Energy shall submit plans and schedules for removal, decontamination or disposal of post-retrieval residual PCB remediation waste. These plans and schedules may be based upon and consistent with component closure activity plans for tank 241-C-111 as established by Ecology pursuant to WAC 173-303-610, and TPA Appendix I Section 2.2.1. If component closure activity plans are used in whole or part as the basis for post-retrieval management of residual PCB remediation waste, Energy shall ensure that total PCBs, measured as the sum of Aroclors, are identified as constituents of concern in the component closure activity plans. For retrieval equipment within the scope of Phase II Condition 1 that may be used for subsequent SST retrievals requiring approval under 40 CFR 761.61(c), Energy may submit documentation of the proposed reuse in lieu of the otherwise-required plans and schedules. These plans and schedules shall comprehensively address all aspects of residual PCB remediation waste management related to activities covered by this authorization, specifically including but not limited to in-tank residuals in tank 241-C-111, any spills, releases or leaks from tank 241-C-111 during retrieval, residuals in equipment within the scope of Phase II Condition 1 and any related spills or releases. Energy may also request from EPA written approval of alternate submission schedules as necessary to ensure integration of these submissions with permit modification requests and component closure activity plans required by the Washington State Department of Ecology pursuant to TPA milestone M-45-15.

7. Energy shall maintain and operate leak detection, monitoring and mitigation (LDMM) systems as documented in Section 4.2 of the C-111 TWRWP, RPP-37739, Rev. 1. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2 and 4.6 of the C-111 TWRWP, RPP-37739, Rev. 1.

8. Energy may request changes to schedules specified in these tank 241-C-111 Phase II conditions. Such requests shall be in writing, including justification for the requested modifications, and submitted to the EPA contacts listed in Phase I condition 6. Prior to written approval of the requested change, Energy shall comply with the existing conditions of this approval.

9. All condensate/seal pot liquids from the 241-C-11 exhauster, and any supernatant/slurry transfer line liquids or releases to secondary containment structures not draining to or transferred to tank 241-AN-111, must drain to tank 241-C-111.

Should you have any questions or comments, please contact Dave Bartus at 206-553-2804, or Bartus.dave@epa.gov.

Sincerely,

Edward J. Kowalski, Director
Office of Compliance and Enforcement

Enclosures (2)

cc: Jane Hedges, Washington State Department of Ecology
Christopher J. Kemp, Department of Energy – Office of River Protection

Enclosure 1

Supporting Documentation

Approval of the TSCA RBDA Application for Retrieval of Wastes from Single-Shell Tanks
Phase II Approval for Tank 241-C-111

1) "241-C-111 Tank Waste Retrieval Work plan", RPP-37739, Rev. 1, JS Schofield, August, 2009, Washington River Protection Solutions, Richland, Washington.

2) Letter, Jeffery J. Lyon, Washington State Department of Ecology, to Shirley J. Olinger, United States Department of Energy – Office of River Protection, "Department of Ecology (Ecology) Approval of *241-C-1l] Tank Waste Retrieval Work Plan"* R-PP-37739, Revision 1," dated October 13, 2009

3) Letter, Roy J. Schepens, United States Department of Energy, Office of River Protection, to Ron Kreizenbeck, United States Environmental Protection Agency, Region 10, "Transmittal of Application for Polychlorinated Biphenyl (PCB) Risk Assessment for the Mobilization of Single-Shell Tank (SST) Solid Waste Using Double-Shell Tank (DST) Supernate," dated November 19, 2004.

4) Letter, Michael A. Bussell, United States Environmental Protection Agency, Region 10 to Roy J. Schepens, United States Department of Energy, Office of River Protection, "Approval of the Toxic Substance Control Act (TSCA) Risk-based Disposal Approval (RBDA) Application for the Mobilization of Single-Shell Tank Solid Waste Using Double-Shell Tank Supernate," dated June 2, 2005.

5) E-mail, August 6, 2008, Christopher J. Kemp, Department of Energy, Office of River Protection to Dave Bartus, EPA Region 10, "Response to a question from EPA via telephone last week."

Enclosure 2

Statement of Basis

Approval of the Toxic Substances Control Act (TSCA) Risk-Based Disposal Approval (RBDA) Application for Retrieval of Wastes from Hanford's Single-Shell Tanks (SSTs) Using Double-Shell Tank (DST) Supernatant.

Phase II Approval for Tank 241-C-111

Background

On November 19, 2004, the United States Department of Energy submitted an application for a risk-based disposal approval (Reference 3) under the Toxic Substances Control Act for retrieval of wastes from twelve of Hanford's single-shell tanks using double-shell tank supernatant. On June 2, 2005 (Reference 4), EPA issued a Phase I approval common to retrieval of wastes from all twelve tanks, and a tank-specific Phase II approval specific to tank 241-S-102. The Statement of Basis for the Phase I approval and the S-102 Phase II approval contains detailed background information regarding the jurisdictional basis for Energy's SST retrieval RBDA application, the approach adopted by EPA for issuing a determination in response to the application, and the nature of and the relationship between Phase I and Phase II approvals. The following sections of the June 2, 2005 approval statement of basis are incorporated by reference into this Phase II approval for retrieval of tank 241-C-111.:

Background;
Overview of Energy's RBDA Application;
Relationship of Energy's RBDA Application to Department of Ecology Retrieval Approvals;
EPA's evaluation of Energy's application.

Phase II Review Evaluation – Tank 241-C-111

The tank-specific component of Energy's retrieval RBDA application for tank 241-C-111 is the corresponding TWRWP, "Tank C-111 Tanks Waste Retrieval Work Plan," RPP-33116, Rev. 2, (C-111 TWRWP, Reference 1). This document was approved as a Tri-Party Agreement (TPA) primary document on October 13, 2009. (Reference 2). Briefly, EPA has considered the following factors in its Phase II evaluation of Energy's application with respect to tank 241-C-111:

- Basic justification for use of DST supernatant;

- Technical standards applicable to equipment used for retrieval external to tank 241-C-111, including inspection, monitoring and response procedures with respect to transfer equipment;
- Waste compatibility between tank wastes to be retrieved and DST supernatant;
- Leak Detection, Monitoring and Mitigation requirements for tank 241-C-111 tanks during retrieval;
- Post-retrieval characterization of residuals remaining in tank 241-C-111.
- Change of status of tank 241-C-111 from an "assumed leaker" to a "sound" tank.

Energy has provided a brief outline of benefits and risks of using raw water versus DST supernatant for purposes of retrieving solid waste/sludge from C-102 Series tanks in Section 3.2.1 of the C-102 Series TWRWP, as well as in the C-111 TWRWP. EPA finds that the significant savings in DST space documented for use of supernatant versus raw water, coupled with the reduction in sodium ([in the form of sodium hydroxide) addition required for DST corrosion control in the case of raw water use provides an adequate basis for finding the risk differential between raw water and supernatant use does not pose an unreasonable risk of injury to health or the environment. EPA notes that its consideration of this point has two components: a finding that the use of DST supernatant itself does not pose an unreasonable risk, and a finding that the risk differential between use of raw water and supernatant does not pose an unreasonable risk. The comparison of risks and benefits of using raw water versus DST supernatant provided by Energy addresses the second component. The remainder of this approval and the accompanying analysis addresses the first component.

It is EPA's informal understanding that receiving DST/supernatant source assignments may change as the SST retrieval program evolves, as a better understanding of retrieval technology is obtained and limited available DST space is optimized. EPA does not expect that these changes will provide a basis for any significant changes in its basis for this approval. In the case of the tank C-111 TWRWP, however, Energy has explicitly identified tank 241-AN-111 as the associated DST, and has not proposed any other receiving DST/supernatant source DSTs. Should Energy wish to use a DST other than tank 241-AN-111 for retrieval of tank 241-C-111, Energy may do so provided a request to amend this RBDA approval is submitted to and approved by EPA. EPA may then amend the approval as necessary to reflect Energy's submission and to ensure retrieval activities do not pose an unreasonable risk of injury to health or the environment.

EPA's approach to ensuring that potential leaks from equipment used for retrieval (other than tank 241-C-111 itself) are prevented to the degree necessary to demonstrate that they do not pose an unreasonable risk is based on application of RCRA technical standards found in 40 CFR 265.191 through 196. EPA is applying these standards under TSCA authority in partial satisfaction of the requirements of 40 CFR 761.61(c), not under the

statutory authority of RCRA Section 3005(e)[1] or Ecology's authorized dangerous waste program. This approach is consistent with Section 5.0 and Table 5-1 of the C-111 TWRWP document.

These standards address key elements related to protective operation of such equipment, including design and installation of the equipment, secondary containment requirements, operating and inspection requirements, and response to leaks or spills. EPA notes that pits, such as the tank 241-AN-111 pit, are not required to have secondary containment, since the pits serve as secondary containment for the transfer lines, valves, etc., located in them.

Section 3.1.1 of the C-111 TWRWP notes that a formal waste compatibility assessment of wastes in tank 241-C-111 with wastes in DST tank 241-AN-111 will be completed prior to the start of retrieval activities. While EPA has not been provided any data suggesting that compatibility issues might exist, wastes in tank 241-AN-111 have in general not originated from tank 241-C-111. Since wastes being retrieved under this approval and the supernatant used to mobilize the wastes during retrieval are not from the same source, the potential for incompatibility cannot be ruled out. EPA is including a condition (Condition 3) in this C-111 Phase II approval that requires Energy to complete such assessments and to notify EPA prior that the assessment has been completed prior to the start of the proposed retrieval activities.

EPA is not requiring that Energy provide EPA with a copy of the waste compatibility assessment report, only that Energy notify EPA that the assessment has been completed. EPA believes that this notify-only approach is appropriate, since Energy must notify EPA of any new information that might provide EPA with the basis to modify conditions of this RBDA approval, or to withdraw the approval. See Condition xxx of the Phase I RBDA approval. Should Energy identify a waste incompatibility, the Phase I approval Condition xxx approval would allow EPA to then modify or revoke the C-111 Phase II RBDA approval accordingly to ensure that the TSCA "no unreasonable risk" standard is satisfied.

EPA does not expect that tank 241-C-111 will contain any separable organic layers, since this tank is a sludge tank which does not contain any pumpable liquids. EPA expects that final resolution of this question will be documented in the pre-retrieval waste compatibility waste assessment that must be prepared under Phase II condition 3 for tank 241-C-111.

Leak detection, monitoring and mitigation (LDMM) with respect to potential releases from tank 241-C-111 during retrieval is of key environmental significance, particularly in

[1] Although EPA is establishing requirements of this TSCA approval based in part on the technical standards of 40 CFR 265, this approach must not in any way be construed as a regulatory determination of the applicability of the requirements of 40 CFR 265 under the federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C., 6901 et. seq. as amended, the state Hazardous Waste Management Act (HWMA), 70.105 Revised Code of Washington (RCW), or implementing regulations at Washington Administrative Code (WAC) 173-303.

connection with use of TSCA-regulated DST supernatant. Tank C-111 is classified as an "assumed leaker" as specified in HNF-EP-0182, *Waste Tank Summary Report for Month Ending October 31, 2008*. The tank history was reevaluated as described in RPP-ENV-33418, *Hanford C-Farm Leak Assessments Report; Tanks 241-C-101, 241-C-110, 241-C-111, 241-C-105 and Unplanned Waste Releases*, Rev. 1, and there was a consensus agreement that the apparent waste loss from this tank which led to it being classified an "assumed leaker" was due to evaporation. Tank leak assessment RPP-ASMT-39155, *Tank 241-C-111 Leak Assessment Report*, evaluated the information available for C-111 and reached consensus that the level decrease observed from 1965 to 1969 was the result of evaporation and thermal contraction, and that the tank did not leak. The leak assessment recommended that the tank status be revised from Assumed Leaker to Sound. Therefore, use of DST supernatant PCB remediation waste for purposes of mobilizing and retrieving tank 241-C-111 wastes will not pose an unreasonable risk with respect to potential releases from tank 241-C-111 itself.

As noted in previous Phase II RBDA approvals, Energy has been evaluating the applicability and performance of high-resolution resistivity (HRR) as a means of ex-tank leak detection during SST retrievals. Section 4.5.3 of the C-111 TWRWP summarizes results of HRR demonstration testing, including results from field testing in soils in the vicinity of tank 241-S-102. These results indicate that HRR can be expected to provide superior leak detection performance, compared to modeled dry-well logging performance discussed in Section 4.5.1 of the C-111 TWRWP. Therefore, EPA is basing this C-111 Phase II RBDA approval on use of HRR as the primary ex-tank leak detection system, with dry-well logging and static water level monitoring as secondary, or backup, methods.

Section 4.6 of the C-111 TWRWP addresses response actions to leaks in above-ground containment structures. This section states that should a leak be detected in the above-ground containment structures, the waste would be transferred to the SST being retrieved using the sump pump. Via an e-mail of August 6, 2008, (Reference 5[2]), Energy clarified that leaks to secondary containment from such structures drain by gravity to the SST being retrieved (tank 241-C-111 in this instance), whereas others, such as valve boxes, are not equipped with drains and must be emptied via a sump pump back to the tank of origin. This approach is acceptable, and consistent with interim status technical standards applied pursuant to C-111 Phase II approval Condition 2. See, in particular, 40 CFR 265.196(b). This approach also ensures that PCB remediation waste is not inadvertently placed into a non-PCB tank not subject to TSCA approval.

Measurement and characterization of residual waste remaining in tank 241-C-111 after completion of retrieval activities is critical to evaluate potential environmental impacts of retrieval activities, define any mitigation measures that may be required, and to define the nature and scope of closure activities required under Ecology's dangerous waste program and residual management under TSCA. Post-retrieval residual characterization activities may be performed under either TPA Appendix H procedures, should Energy choose to

[2] While this e-mail was provided to EPA in the context of the tank 241-C-110 Phase II RBDA approval, the language of the e-mail makes it clear that the substance of the e-mail applies to all C-farm SST retrievals.

seek an exception to Appendix H retrieval requirements, or as part of closure activities which Ecology may establish in the dangerous waste permit. Although such activities and data are critical to the required TSCA demonstration of no unreasonable risk of injury to health or the environment required by 40 CFR 761.61(c), EPA is not imposing explicit residual or sampling requirements as part of either Phase I or Phase II reviews or determinations. Rather, EPA is electing to require such information to be obtained and included in the plans and schedules to be submitted by Energy to address management of residual PCB remediation waste. EPA will expect these submissions to address PCB remediation waste residuals both within tank 241-C-111 (retrieval residuals), potential leak residuals, residuals in transfer equipment and ancillary equipment, as well as spills/releases that may have occurred from such equipment.

EPA is not requiring characterization or sampling of retrieved wastes placed in the enumerated receiving DSTs as part of this RBDA approval. While these data will clearly be needed and consistent with expectation of the Framework Agreement (see item 6 of Reference 8 in the Phase I approval issued June 2, 2005, cited as Reference 8 in the C-102 Series Phase II RBDA approval), such activities are outside the scope of this C-111 Phase II RBDA approval, and are more properly addressed as part of the DST component of the Framework Agreement RBDA. Prior to issuing a determination regarding the DST component of the Framework Agreement RBDA, EPA notes it may be advantageous for Energy to complete a representative characterization of wastes placed in tank 241-AN-111 during the course of tank 241-C-111 retrieval.

During or following retrieval activities using TSCA-regulated 241-AN-111 supernatant, seal pot or condensate liquids from the tank 241-C-111 exhauster, drain-back from slurry and waste transfer lines, and possibly wastes from waste management secondary containment structures, may flow back to tank 241-C-111. Although the C-111 TWRWP does not document the TSCA regulatory status of these liquids, EPA is requiring that these liquids flow back only to either tank 241-AN-111 or tank 241-C-111, and not to other SSTs that have not yet undergone retrieval. This will ensure that there is not inadvertent placement of PCB remediation waste in SST tanks not authorized to receive or manage PCB remediation waste.

Discussion of conditions

Phase II (Tank-Specific) Conditions

1. The spatial boundaries of this approval shall be the 241-AN-111 valve pit for supernatant retrieved from tank 241-AN-111, extending to (following the direction of supernatant/retrieved slurry flow) the retrieval SST, thence to the connection to the tank 241-AN-111 return riser in the 241-AN-06A pump pit for slurry returned from the retrieval SST. Tank 241-C-111 is explicitly included within the spatial boundaries of this approval. EPA may modify the spatial boundary defined by this condition or the requirements of this approval based on documentation required by this approval condition as necessary to ensure that activities subject to this approval do not pose an unreasonable risk of injury to human health or the environment.

This condition defines the scope of this approval. Elements of the DSTs "upstream" (with respect to supernatant flow) of the DST valve pit identified by the written documentation required by this condition are considered within the scope of the Framework Agreement tank waste disposal system, and outside the scope of this Phase II RBDA approval.

2. All equipment used for carrying out retrieval activities external to tank 241-C-111 shall comply with the requirements of 40 CFR 265.191 through 196. Tank 241-C-111 proper and any equipment used for retrieval activities internal to this tank are excluded from this requirement. With respect to compliance with the requirements of 40 CFR 265.196 (response to leaks or spills, and disposition of leaking or unfit-for-use tank systems), Energy shall maintain and conduct retrieval operations according to procedures no less stringent than Sections 4.2.1.4, and 4.6.3 of the C-111 TWRWP, RPP-37739, Revision 1.

The purpose of this condition is to ensure that PCB remediation waste management activities actually conducted in the field provide substantial assurance that spills, leaks or releases to the environment will not occur, and that should equipment failures or leaks occur, appropriate steps are taken to mitigate such events. For purposes of applying this condition, the cited equipment shall be considered a new tank system. Tank 241-C-111 itself is excluded from this requirement since it is clear that it cannot achieve compliance with these standards. The risk of leaks/releases from tank 241-C-111 proper is addressed via Phase II approval condition 7, relating to leak detection monitoring and mitigation, and management of post-retrieval remediation waste residuals, respectively.

The requirement to maintain and conduct operations according to certain procedures is intended to ensure that retrieval operations conducted according to the approved C-111 TWRWP document are in compliance with this condition. A discussion of equipment expected to be used for retrieval tank 241-C-111 can be found in Section 3.1.1 of the C-111 TWRWP. Procedures for operating this equipment, and specific decision criteria for identifying and responding to leaks, are provided in the referenced sections of the C-111 TWRWP. These sections of the TWRWP provide documentation of a floor on the level of performance that can be expected from application of the standards in 40 CFR 265.196 with respect to the TSCA no unreasonable risk criteria. In establishing this condition, EPA finds that compliance with the cited standards and operating requirements provides an adequate basis to demonstrate that retrieval activities will not pose an unreasonable risk of injury to health or the environment with respect to ex-tank retrieval equipment.

3. Energy shall complete a formal waste compatibility assessment of wastes in tank 241-C-111 according to HNF-SD-QM-OCD-015 and Section 3.1.1 of the C-111 TWRWP, RPP-37739, Revision 1, as approved by Ecology. Energy shall provide notice of availability of the waste compatibility assessment report to the EPA contacts listed in Phase I approval Condition 6 prior to the start of retrieval activities covered by this approval. Electronic mail communication is acceptable for this notification. Energy shall provide a printed or electronic copy of this report to EPA upon request.

The purpose of this condition is to ensure that the contents of tank 241-C-111 are compatible with the contents of the receiving DST, tank 241-AN-111, and the supernatant from tank 241-C-106 used for retrieval. This condition is consistent with Sections 3.1.1 and 3.2 of the C-111 TWRWP. EPA notes that in the C-102 Series Phase II RBDA approval, EPA established a requirement for physical submission of the corresponding waste compatibility assessment report to EPA prior to the start of retrieval activities. Given the success of previous retrievals using DST supernatant with no history of waste compatibility issues, EPA is relaxing this requirement and specifying only notification of completion of the waste compatibility assessment report. In doing so, EPA also notes Energy has an affirmative obligation under Phase I approval Condition 4 to report within specified timeframes data (such as might appear in the waste compatibility report) that may provide a basis for a finding that retrieval activities pose an unreasonable risk of injury to health or the environment, and to cease retrieval activities that may pose such an unreasonable risk.

Future Phase II approvals may contain agency submission requirements for waste compatibility assessment reports should such a requirement appear in approved TWRPS.

4. Within 45 days following the effective date of this approval, Energy shall submit to EPA a post-retrieval Data Quality Objective (DQO) report and a sampling and analysis plan (SAP) for post-retrieval characterization and residual PCB remediation waste sampling for tank 241-C-111. These plans may be based in whole or part on closure requirements which Ecology may have established in the Hanford Dangerous Waste permit pursuant to Washington Administrative Code 173-303-610. Energy shall ensure that the DQO report and the sampling and analysis plan provide for generation of data characterizing residual PCB remediation waste adequate for purposes of evaluating the risk of injury to human health and the environment from residual PCB remediation waste, and for evaluation of appropriate removal, decontamination or disposal actions for such residual PCB remediation waste. This plan shall be based on and consistent with the requirements of TPA Appendix I Section 2.1.6 requirements.

The purpose of this condition is to ensure that EPA receives documentation of Energy's plans for post-retrieval residual sampling and analysis, as this information has not been provided as part of Energy's RBDA application or supplemental information. Particulars of how post-retrieval sampling relates to management of PCB remediation waste residuals are discussed in the section "Evaluation of Other Emission Pathways" in the Phase I approval issued June 2, 2005. Based on Energy's sampling and analysis plan required by this condition, EPA will modify this RBDA approval to incorporate the approved sampling and analysis requirements and appropriate schedules. EPA expects that the submissions required by this condition will be consistent with, if not identical to, the corresponding documents required by TPA Appendix I Section 2.1.6 – few if any modifications to the TPA-required documents should be necessary to fully comply with this RBDA condition. EPA notes that this TPA requirement provides for submission of a DQO and SAP prior to the start of retrieval activities. Although previous Phase II approvals provided for the corresponding submission with 45 days of the effective date of

the Phase II approval to provide a reasonable period for compliance, this approval requires the submission prior to the start of retrieval.

EPA acknowledges that it has endorsed the TPA Appendix I requirements referenced by Conditions 4, 5 and 6 through approval of TPA change form M-45-04-01. Two key factors, however, warrant restatement of these TPA Appendix I requirements in this risk-based disposal approval. First, EPA's approval of TPA change form M-45-04-01 was based solely on federal statutory authorities cited by the TPA – these do not include the Toxics Substance Control Act. Therefore, this approval is the only EPA action establishing these requirements under TSCA authority.

Second, the language of TPA Appendix I is quite clear that the documents referenced by Conditions 4, 5 and 6 are required to be submitted only to Ecology, not also to EPA. Therefore, Conditions 4, 5 and 6 are necessary to ensure submission of these documents to EPA for consideration under TSCA authority with respect to this Phase II approval.

5. Within 120 days following completion of retrieval activities covered by this approval, or other such time corresponding to a submission date approved by Ecology through applicable TPA administrative processes with respect to requirements of TPA Appendix I Section 2.1.7, Energy shall submit to EPA either a retrieval data report pursuant to the approved DQO/sampling and analysis plan required by Phase II Condition 4 above, or a TPA Appendix H request for exception. This report shall include the information required by TPA Appendix I Section 2.1.7

The purpose of this condition is to ensure that EPA receives data necessary to evaluate the environmental performance of retrieval activities necessary to evaluate the need for and nature of post-retrieval PCB remediation waste residual management requirements. This condition and its schedule are fully consistent with requirements in the TPA for submissions to Ecology, documented in TPA Appendix I, Section 2.1.7.

EPA is including language in Conditions 5 and 6 to accommodate possible modification of TPA Appendix I schedules approved by Ecology. Consistent with EPA's stated intent that retrieval requirements and schedules be developed through the dangerous waste process under Ecology lead regulatory agency oversight, EPA believes it entirely appropriate for TSCA to conform to Ecology-authorized project schedules. In the highly-unlikely event that EPA finds that Ecology-authorized schedules do not support a finding of no unreasonable risk, EPA may modify Phase II approval Conditions 5 and 6 accordingly pursuant to Phase I approval Condition 5. It is EPA's intent to structure conditions relating to existing dangerous waste requirements in a way that avoids duplicative administrative processes that may be necessary to ensure consistency between dangerous waste requirements and conditions of this approval.

6. Within 120 days following completion of retrieval activities covered by this approval, or other such time corresponding to a submission date approved by Ecology through applicable TPA administrative processes with respect to requirements of TPA Appendix I Section 2.2.1, Energy shall submit plans and schedules for removal,

decontamination or disposal of post-retrieval residual PCB remediation waste. These plans and schedules may be based upon and consistent with component closure activity plans for tank 241-C-111 as established by Ecology pursuant to WAC 173-303-610, and TPA Appendix I Section 2.2.1. If component closure activity plans are used in whole or part as the basis for post-retrieval management of residual PCB remediation waste, Energy shall insure that total PCBs, measured as the sum of Aroclors, are identified as constituents of concern in the component closure activity plans. For retrieval equipment within the scope of Phase II Condition 1 that may be used for subsequent SST retrievals requiring approval under 40 CFR 761.61(c), Energy may submit documentation of the proposed reuse in lieu of the otherwise-required plans and schedules. These plans and schedules shall comprehensively address all aspects of residual PCB remediation waste management related to activities covered by this authorization, specifically including but not limited to in-tank residuals in tank 241-C-111, any spills, releases or leaks from tank 241-C-111 during retrieval, residuals in equipment within the scope of Phase II Condition 1 and any related spills or releases. Energy may also request from EPA written approval of alternate submission schedules as necessary to ensure integration of these submissions with permit modification requests and component closure activity plans required by the Washington State Department of Ecology pursuant to TPA milestone M-45-15.

The purpose of this condition is to ensure that EPA timely receives Energy's plans relevant to post-retrieval management of PCB remediation waste residuals. As discussed in this approval and in EPA's letter of December 9, 2004 (Reference 18 in the Phase I/Tank 241-S-102 Phase II approval dated June 2, 2005), EPA anticipates that closure activities and requirements developed pursuant to WAC 173-303-610, -640, and -800 will provide a basis to demonstrate that the proposed retrieval activities do not pose an unreasonable risk of injury to human health or the environment with respect to remediation waste residuals. That said, EPA is wording this condition to state that such plans "may" be based upon, rather than "shall" be based upon to accommodate the possibility that post-retrieval flushing of tank 241-C-111 may be sufficiently effective that post-retrieval management of PCB remediation waste residuals is better addressed through a decontamination-based strategy than one based on a dangerous waste permit-based component closure activity plan.

This RBDA condition is consistent with the requirements of TPA Appendix I, Section 2.2.1, which requires submission of a dangerous waste closure plan/permit modification request no later than concurrent with the retrieval data report or Appendix H exception request required by TPA Appendix I Section 2.1.7, which in turn is 120 days following completion of retrieval activities. Therefore, this condition is functionally identical to corresponding TPA requirements governing submission of closure component activity work plans to Ecology.

The RBDA condition relating to inclusion of PCBs in component closure activity plans is to help ensure that decision documents developed pursuant to regulatory authorities other than TSCA (specifically, Ecology's authorized dangerous waste program) will satisfy

TSCA requirements when reviewed by EPA for incorporation into this approval. Nothing in this condition is intended to preclude self-implementing re-use, decontamination or disposal of retrieval equipment external to tank 241-C-111 in compliance with applicable rules and requirements prior to submission of documents required by this condition.

7. Energy shall maintain and operate leak detection, monitoring and mitigation (LDMM) systems as documented in Section 4.2 of the C-111 TWRWP, RPP-37739, Revision 1. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2 and 4.6 of the C-111 TWRWP, RPP-37739, Revision 1

EPA is establishing this condition to ensure, to the extent technically practicable, that potential leaks from tank 241-C-111 are detected during or following retrieval activities. Although Energy's RBDA application provides no basis to conclude that tank 241-C-111 are currently leaking or are likely to leak during retrieval, the design and age of SSTs in general make it clear than an engineering approach alone to preventing leaks is not defensible. Therefore, EPA considers an explicit condition requiring an LDMM system necessary to demonstrate that the approved retrieval activities do not pose an unreasonable risk of injury.

With respect to retrieval LDMM, EPA is providing specific references to the TWRWP document as a source of objective criteria and for and performance expected of procedures necessary to implement the required LDMM system as the basis for this approval. EPA recognizes the need to allow flexibility in conducting retrieval operations while still ensuring a level of performance of LDMM systems at least equivalent to that documented in the TWRWP and used by EPA as the basis in part for this approval. Therefore, EPA is not specifying detailed implementation requirements which might limit flexibility necessary during retrieval operations. Instead, EPA is specifying compliance requirements by reference to the general performance expectations of the HRR technology and the leak mitigation strategy documented in Sections 4.2.1 and 4.6 of the C-111 TWRWP.

8. Energy may request changes to schedules specified in these tank 241-C-111 Phase II conditions. Such requests shall be in writing, including justification for the requested modifications, and submitted to the EPA contacts listed in Phase I condition 6. Prior to written approval of the requested change, Energy shall comply with the existing conditions of this approval.

The purpose of this condition is to reflect EPA's recognition that some elements of retrieval activities (including reporting and documentation) covered by this approval may of necessity require additional time beyond that specified in this approval. In addition, EPA recognizes the need for work to be conducted pursuant to this approval to be consistent with, and integrated to the extent practicable, with EPA's obligation to ensure the approved activities do not pose an unreasonable risk of injury to health or the environment with requirements by Ecology.

9. All condensate/seal pot liquids from the 241-C-111 exhauster, and any supernatant/slurry transfer line liquids or releases to secondary containment structures not draining to or transferred to tank 241-AN-111, must drain to tank 241-C-111.

As discussed above, the purpose of this condition is to prevent inadvertent placement of PCB remediation waste in SST tanks without authorization to receive or manage PCB remediation waste. EPA notes that the C-111 TWRWP suggests that PCB remediation waste covered by this condition could be placed in SST tanks other than C-111 at which retrieval has not yet been completed. Thus, this condition supersedes language in the C-111 TWRWP.