UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

1 JUN 2006

Reply To
Attn Of: OCE-164

Roy J. Schepens, Manager
United States Department of Energy, Office of River Protection
P.O. Box 450, MSIN H6-60
Richland, WA 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 Supernate – Phase II Approval for Tanks 241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112 and Amended Phase II Approval Conditions for Tanks 241-C-103/C-109

Dear Mr. Schepens:

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 tanks 241-C-102, 241-C-I04, 241-C-107, 241-C-108 and 241-C-112 (C-102 Series). Energy is authorized to conduct only those retrieval activities related to the C-102 Series tanks and tanks 241-S-102, 241-C-103 and 241-C-109 for which Phase II approvals have been issued, and precluded from conducting the remainder of the retrieval activities proposed in the November 19, 2004 application, pending associated Phase II determinations by EPA. This letter also modifies two conditions of the C-103/C-109 Phase II approval, issued August 25, 2005, and updates the C-103/C-109 Phase II RBDA approval by referencing the C-103/C-109 TWRWP, RPP 21895, Rev. 3. Conditions applicable to the C-103/C-109 RBDA approval are reprinted in their entirety in Enclosure 3 for convenience.

Enclosure 1 to this approval documents the administrative record that supports this determination. In granting this 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 authorization are in full compliance with conditions of this authorization. The conditions of this approval are enforceable under TSCA and implementing regulations 40 CFR Part 761.6I(c). Any actions by Energy which violate the terms and conditions of

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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 – Tanks 241-C-103 and 241-C-109

2) All equipment used for carrying out retrieval activities external to tanks 241-C-103 and 241-C-109 shall comply with the requirements of 40 CFR 265.191 through 196. Tanks 241-C-103 and 241-C-109 proper and any equipment used for retrieval activities internal to these tanks 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 4.2.2, and 4.6 of the C-103/C-109 TWRWP, RPP-21895, Rev. 2.

Condition 2 of the August 25, 2005, C-103/C-109 Phase II approval is being modified to correct a typographical error. The original C-103/C-109 approval incorrectly referred to RPP-21895, Rev. 2 as a draft process control plan. The modified condition, appearing here in its entirety, corrects this error.

7) Energy shall maintain and operate a baseline (drywell monitoring) and supplemental (modified static liquid level monitoring/waste material balance) leak detection, monitoring and mitigation (LDMM) system as documented in Section 4.0 of the C-103/C-109 TWRWP, RPP-21895, Rev. 2. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2.1 and 4.6 of the C-103/C-109 TWRWP, RPP 21895, Rev. 2

Condition 7 of the August 25, 2005 C-103/C-109 Phase II approval is being modified to correct a typographical error. The original C-103/C-109 approval incorrectly referred to RPP-21895, Rev. 2 as a draft process control plan. The modified condition, appearing here in its entirety, corrects this error.

Finally, references to the C-103/C-109 TWRWP, RPP 21895 Rev. 2 are changed to refer to Rev. 3. Ecology approved RPP 21895 Rev 3 as a TPA primary document via letter of [date] (Reference 9).

Phase II (Tank-Specific) Conditions – Tanks 241-C-102 Series

1. No later than 45 days prior to the start of retrieval for each of the C-102 Series SSTs, Energy shall provide written documentation to EPA and Ecology contacts listed in Phase I approval Condition 6 of the final receiving DST and the associated DST valve pit supernate/slurry return connection point, and DST return riser. For each C-102 Series tank retrieval (the retrieval SST), the spatial boundaries of this approval shall be the valve pit identified in the documentation required by this condition for supernate retrieved from the corresponding DST, extending to (following the direction of supernate/retrieved slurry flow) the retrieval SST, thence to the connection to the receiving DST return riser for slurry returned from the retrieval SST. The retrieval SST is explicitly included within this boundary. 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 the C-102 Series tanks shall comply with the requirements of 40 CFR 265.191 through 196. The C-102 Series tanks proper and any equipment used for retrieval activities internal to these tanks 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 4.2.2, and 4.6 of the C-102 Series TWRWP, RPP-22393, Rev. 3, as approved by Ecology.

3. Energy shall complete a formal waste compatibility assessment of wastes in the C-102 Series tanks according to HNF-SD-QM-OCD-015 and Section 3.1.1 of the C-102 Series TWRWP, RPP-22395, Rev. 3, as approved by Ecology. Energy shall provide a copy of the waste compatibility assessment report to the EPA contacts listed in Phase I approval Condition 6 no less than thirty (30) days prior to the start of retrieval activities covered by this approval, or at such other time as EPA may approve of in writing and in advance. Electronic mail communication is acceptable for this notification.

4. No later than the start of retrieval activities for each C-102 Series tank, 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. These plans may be based in whole or part on closure requirements 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. This report shall specifically include results reasonably available at the time of submission from the High-Resolution Resistivity (HRR) demonstration(s) described in Section 4.2.1.3 of the C-102 Series TWRWP Rev. 3 as approved by Ecology.

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 C-102 Series tanks required by 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 the C-102 Series tanks, any spills, releases or leaks from C-102 Series tanks 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 a baseline (drywell monitoring) and supplemental (modified static liquid level monitoring/waste material balance) leak detection, monitoring and mitigation (LDMM) system as documented in Section 4.0 of the C-102 Series TWRWP, RPP-22393, Rev. 3 as approved by Ecology. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2.1 and 4.6 of the C-102 Series TWRWP, including but not limited to high-resolution resistivity (HRR) LDMM deployment documented in Section 4.2.1.3.

8. Energy may request changes to schedules specified in these C-102 Series 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. Energy shall submit to the EPA contacts listed in Phase I approval Condition 6 the final report of any high-resolution resistivity (HRR) leak detection test(s) which may be conducted at any or all C-102 Series tanks pursuant to the C-102 TWRWP RPP-22393, Rev. 3, Section 4.2.1 as approved by Ecology and any Ecology-approved test plans as may be applicable. This submission shall be concurrent with submission of the report, if any, to Ecology.

Should you have any questions or comments, please contact Dave Bartus at (509) 372-7938, or Bartus.dave@epa.gov.

Sincerely,

Michael A. Bussell, Director
Office of Compliance and Enforcement

Enclosures (3)

cc: Jane Hedges, Washington State Department of Ecology
Mary Beth Burandt, Department of Energy – Office of River Protection
Moses Jarayssi, CH2M Hill Hanford Inc.
Phil Miller, CH2M Hill Hanford Inc. Inc.

Enclosure 1

Supporting Documentation

Approval of the TSCA RBDA Application for Retrieval of Wastes from Single-Shell Tanks Phase II Approval for Tanks 241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112

1) "*C-102, C-104, C-107, C-108, and C-112 Tanks Waste Retrieval Work Plan*", RPP-22393, Rev. 3, JS Schofield, February, 2006, CH2M HILL Hanford Group, Inc., Richland, Washington.

2) Letter, Jeffery J. Lyon, Washington State Department of Ecology, to Roy J. Schepens, United States Department of Energy – Office of River Protection, "RPP-22393, Rev. 2B, '241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112 Tank Waste Retrieval Work Plan' Modification Notice 020706-1," dated April 20, 2006.

3) Letter, Jeffery J. Lyon, Washington State Department of Ecology, to Roy J. Schepens, United States Department of Energy – Office of River Protection, "Single-shell Tank Deployment Demonstration and Injection Leak Testing of the High-Resolution Resistivity Long Electrode Leak Detection and Monitoring System, RPP-17191, Rev. 1," dated July 19, 2004.

4) Letter, Jeffery J. Lyon, Washington State Department of Ecology, to Roy J. Schepens, United States Department of Energy – Office of River Protection, "Single-shell Tank Deployment Demonstration and Injection Leak Testing of the High-Resolution Resistivity Long Electrode Leak Detection and Monitoring System, RPP-17191, Rev. 1, Letter to Mr. Schepens from Jeffery Lyon, July 19, 2004, HRR Test Plan Requests," dated July 27, 2004.

5) 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.

6) 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.

7) E-mail, Christopher J. Kemp, CH2M Hill to Dave Bartus, EPA, "FW: C-103/C-109 retrieval – Phase II approval draft," dated August 15, 2005.

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8) E-mail, “Separable Organic Layers Issue (Tanks C-102 series),” Toni Faust, CH2M Hill to Dave Bartus, EPA, dated November 07, 2005.

9) **Letter, Jeffery J. Lyon, Washington State Department of Ecology, to Roy J. Schepens, United States Department of Energy – Office of River Protection, “RPP-21895, Rev 2B, “’241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112 Tank Waste Retrieval Work Plan’ Modification Notice 020706-2,” dated April 20, 2006.**

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) Supernate.

Phase II Approval for Tanks
241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112

Background

On November 19, 2004, the United States Department of Energy submitted an application for a risk-based disposal approval (Reference 5) under the Toxic Substances Control Act for retrieval of wastes from twelve of Hanford's single-shell tanks using double-shell tank supernate. On June 2, 2005 (Reference 6), 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 tanks 241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112 (C-102 Series tanks:

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 – C-102 Series Tanks

The tank-specific component of Energy's retrieval RBDA application for the C-102 Series tanks is the corresponding TWRWP, "241-C-102, 241-C-104, 241-C-107, 241-C-108 and 241-C-112 Tanks Waste Retrieval Work Plan," RPP-22393, Rev. 3, (C-102 Series TWRWP, Reference 1). This document was approved as a Tri-Party Agreement (TPA) primary document on **November 9, 2005** [Change this date to match the Rev. 3 letter) (Reference 2). Briefly, EPA has considered the following factors in its Phase II evaluation of Energy's application with respect to the C-102 Series tanks:

- Basic justification for use of DST supernate;
- Technical standards applicable to equipment used for retrieval external to C-102 Series tanks, including inspection, monitoring and response procedures with respect to transfer equipment;
- Waste compatibility between tank wastes to be retrieved and DST supernate;
- Leak Detection, Monitoring and Mitigation requirements for the C-102 Series tanks during retrieval;
- Post-retrieval characterization of residuals remaining in the C-102 Series tanks.

Energy has provided a brief outline of benefits and risks of using raw water versus DST supernate for purposes of retrieving solid waste/sludge from C-102 Series tanks in Section 3.2.1 of the C-102 Series TWRWP. EPA finds that the significant savings in DST space documented for use of supernate 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 supernate 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 supernate itself does not pose an unreasonable risk, and a finding that the risk differential between use of raw water and supernate does not pose an unreasonable risk. The comparison of risks and benefits of using raw water versus DST supernate provided by Energy addresses the second component. The remainder of this approval and the accompanying analysis addresses the first component.

For the C-102 Series tanks, Energy is proposing use of supernate from the following DSTs:

SST Tank	Receiving DST/Supernate Source
241-C-102	241-AY-101
241-C-104	241-AN-102
241-C-107	241-AN-106
241-C-108	241-AN-106
241-C-112	241-AN-106

It is EPA's informal understanding that these proposed receiving DST/supernate 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, but is including an approval condition requiring Energy to provide EPA with the final receiving DST assignment and connection point prior to the start of each SST retrieval, respectively. See Condition 1 of this C-102 Series Phase II RBDA approval. 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 the C-102 Series tanks themselves) 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). This approach is consistent with Section 5.0 and Table 5-1 of the C-102 Series 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 pit associated with double-shell tanks associated with the C-102 Series retrievals themselves 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-102 Series TWRWP notes that a formal waste compatibility assessment of wastes in the five subject tanks with wastes in the corresponding receiving DSTs has not yet been completed. EPA is including a condition (Condition 3) in this C-102 Series Phase II approval that requires Energy to complete such assessments and to provide the results to EPA prior to the start of the proposed retrieval activities. As with the tank 241-S-102 retrieval Phase II RBDA approval issued previously, EPA may then modify or revoke the C-102 Series retrieval Phase II RBDA approval should the assessment document compatibility issues that demonstrate the proposed retrieval activities may pose an unreasonable risk of injury to health or the environment.

While EPA has not been provided any data suggesting that compatibility issues might exist, wastes in the proposed receiving DSTs are not uniquely the result of previous retrieval activities from the subject SSTs. Since wastes being retrieved under this approval and the supernate used to mobilize the wastes during retrieval are not from the same source, the potential for incompatibility cannot be ruled out.. This situation differs from that in the case of tank 241-S-102, where the supernate used for Phase II retrieval was primarily the result of salt-cake sluicing from tank 241-S-102. Therefore, EPA is accepting Energy's assertion in Section 3.1.1 of the C-102 Series TWRWP that there are no known chemical compatibility issues that would prevent the retrieval and transfer of waste from the C-102 Series tanks to the respective receiving DSTs. EPA will, however, verify this assertion with results of the required formal waste compatibility assessment.

Section 2.5 of the C-102 Series TWRWP notes that a number of the subject SSTs received organic wash water from the PUREX process, although no documentation is provided of any separable organic layer. Energy has provided additional analysis of this question based on existing tank waste characterization data, and concluded that no separable organic layer exists in any of the C-102 Series tanks (Reference 8). EPA will, however, examine this question when reviewing the pre-retrieval waste compatibility assessment for the C-102 Series tanks, as well as the post-retrieval PCB remediation waste residual sampling required by Condition 5 of the C-102 Series Phase II approval.

Leak detection, monitoring and mitigation (LDMM) with respect to potential releases from the C-102 Series tanks during retrieval is of key environmental significance, particularly in connection with use of regulated DST supernate. Although Energy's RBDA application provides no basis to conclude that any of the C-102 Series tanks 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.

The C-102 Series TWRWP document describes application of both in-tank and ex-tank[1] leak detection for purposes of LDMM. With respect to leaks directly from these tanks, applicable techniques include static water level monitoring, and monitoring/logging of dry wells surrounding the tank. In addition, routine process control data from flow meters, level gauges, such as those described in Figure 4.3 of the C-102 Series TWRWP can be used as indicators of gross or catastrophic leaks. Energy has asserted in Section 4.3 of the C-102 Series TWRWP that these technologies "selected for deployment at tanks C-102, C-104, C-107, C-108, and C-112 represents the best available technology that is consistent with the planned approach for waste retrieval."

Energy has also noted in Section 4.2.1.3 of the C-102 Series TWRWP that a demonstration mode deployment of high-resolution resistivity (HRR), which may provide improved leak detection sensitivity, is planned for retrieval of the C-102 Series tanks[2]. Via letters of July 19 and 27, 2004 (References 3and 4), Ecology has provided approval to Energy of a HRR test plan, RPP-17191, Rev. 1, for field testing and evaluation of the HRR system at tank 241-S-102. EPA is not reviewing or approving of this test plan as a basis for this RBDA approval. EPA (in coordination with Ecology) will, however, consider this test plan and the associated demonstration test results. Data from the test may provide insight into retrieval performance of the three tanks (initially scheduled for tanks 241-S-102, 241-C-103 and 241-C-109) at which Energy is conducting the technology demonstration, and a basis for EPA to require implementation of HRR leak detection at future SSTs included in Energy's RBDA approval. EPA is requiring

[1] In-tank leak detection may include techniques such as level monitoring and mass balance calculations. Ex-tank leak detection includes techniques such as dry-well logging, and potentially high-resolution resistivity, both of which measure parameters physically exterior to the tank in question.

[2] The expectation for demonstration-mode testing of HRR was to include work at tank 241-S-102, plus the next three 100-series SSTs undergoing retrieval. Given uncertainties in the time required for individual retrievals to be completed, and availability of receiver DST space (which impacts in part the sequence of retrieval tanks), EPA cannot practicably establish Phase II approval conditions for conducting and reporting on HRR demonstration work for tanks subsequent to 241-S-102 and 241-C-102 other than as described in the TWRPS supporting the respective Phase II approvals. It is likely that not all of the tanks in the C-102 Series TWRWP will be subject to HRR LDMM demonstration testing. At such time as specific retrieval schedules are finalized, and/or a determination is made by Ecology on the fate of HRR as a primary LDMM technology for SST retrieval, EPA expects to modify the various Phase II approvals as necessary to resolve any conflict or ambiguity between such approvals and the associated retrieval plans and schedules. EPA expects that its Phase II approval modifications will be on the basis of revised TWRWP documents approved by Ecology through the Tri-Party Agreement primary document change control process documented in the TPA Action Plan Section 9.3.

inclusion of available data from the HRR test in the post-retrieval report consistent with requirements of TPA Appendix I, and for submission of the final test report. See Condition 9 of the C-102 Series Phase II approval. These conditions are consistent with requirements included in Ecology's July 19th letter (Reference 3).

Given the pilot nature of deploying HRR technology during retrieval of the C-102 Series tanks, EPA does not believe it appropriate to rely exclusively on HRR data for LDMM purposes. EPA will, however, evaluate findings of the pilot deployment, and may (as Ecology may do as well) require application of HRR technology as a condition of future retrievals requiring approval under the requested RBDA.

Section 4.6 of the C-102 Series 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 15, 2005 (Reference 7), Energy clarified that leaks to secondary containment from some such structures drain by gravity to the SST being retrieved, whereas others, such as valve boxes, are not equipped with drains and must be emptied via a sump pump. This approach is acceptable, and consistent with interim status technical standards applied pursuant to C-102 Series Phase II approval Condition 2. See, in particular, 40 CFR 265.196(b).

Measurement and characterization of residual waste remaining in the C-102 Series tanks 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 RCRA and residual management under TSCA. Such activities may be performed under either TPA Appendix H procedures, should Energy choose to seek an exception to Appendix H retrieval requirements, or as part of closure activities under TPA Milestone M-45. 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 the C-102 Series tanks (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 this C-102 Series RBDA approval), such activities are outside the scope of this 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-106 during the course of retrieval activities at the C-102 Series tanks.

This Phase II approval specifically authorizes addition of TSCA-regulated DST supernate to the C-102 Series tanks for purposes of waste retrieval. Section 3.1.2 of the C-102 Series TWRWP notes "Condensate drain lines from the ventilation system will be routed to the last sound tank in C tank farm scheduled for waste retrieval." Via clarification in Reference 7, Energy notes that condensate will be drained to tank 241-C-104. Neither the C-103/C-109 TWRWP (where this cited provision also appears) nor the C-102 Series TWRWP has provided documentation of any Energy determination of whether or not this condensate is PCB remediation waste, EPA notes that this practice is included in the Ecology-approved C-102 Series TWRWP. Phase I approval Condition 1 requires work to be conducted according to approved TWRWPs (or a functions and requirements document in the case of tank 241-S-102). Regardless of whether or not condensate drained to tank 241-C-104 is PCB remediation waste, Section 3.1.2 of the C-102 Series TWRWP and Phase I approval Condition 1 together provide authorization for this practice.

Discussion of conditions

Phase II (Tank-Specific) Conditions

1. No later than 45 days prior to the start of retrieval for each of the C-102 Series SSTs, Energy shall provide written documentation to EPA and Ecology contacts listed in Phase I approval Condition 6 of the final receiving DST and the associated DST valve pit supernate/slurry return connection point, and DST return riser. For each C-102 Series tank retrieval (the retrieval SST), the spatial boundaries of this approval shall be the valve pit identified in the documentation required by this condition for supernate retrieved from the corresponding DST, extending to (following the direction of supernate/retrieved slurry flow) the retrieval SST, thence to the connection to the receiving DST return riser for slurry returned from the retrieval SST. The retrieval SST is explicitly included within this boundary. 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 supernate 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 the C-102 Series tanks shall comply with the requirements of 40 CFR 265.191 through 196. The C-

102 Series tanks proper and any equipment used for retrieval activities internal to these tanks 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 4.2.2, and 4.6 of the C-102 Series TWRWP, RPP-22393, Rev. 3, as approved by Ecology.

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. The C-102 Series tanks themselves are excluded from this requirement since it is clear that these tanks cannot achieve compliance with these standards. The risk of leaks/releases from the C-102 Series tanks proper are addressed via Phase II approval conditions 6 and 7, relating C-102 Series tank 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-102 Series TWRWP document are in compliance with this condition. A discussion of equipment expected to be used for retrieval of the C-102 Series tanks can be found in Section 3.1.1 of the C-102 Series 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-102 Series 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 the C-102 Series tanks according to HNF-SD-QM-OCD-015 and Section 3.1.1 of the C-102 Series TWRWP, RPP-22395, Rev. 3, as approved by Ecology. Energy shall provide a copy of the waste compatibility assessment report to the EPA contacts listed in Phase I approval Condition 6 no less than thirty (30) days prior to the start of retrieval activities covered by this approval, or at such other time as EPA may approve of in writing and in advance. Electronic mail communication is acceptable for this notification.

The purpose of this condition is to ensure that the contents of the C-102 Series tanks are compatible with the contents of the respective receiving DSTs, and the supernate from the respective DSTs used for retrieval. This condition is consistent with Sections 3.1.1 and 3.2 of the C-102 Series TWRWP.

Conditions imposed by Ecology's approval of the tank 241-S-102 Functions and Requirements document (References 20 and 26 for the tank 241-S-102 Phase II RBDA approval) and the tank 241-S-102 Phase II approval condition 3 require submission of the waste compatibility assessment report to Ecology and EPA, respectively, prior to the start of retrieval using DST supernate. In contrast, the approved C-102 Series TWRWP does not contain this requirement, nor has any preliminary compatibility assessment been completed. It is EPA's informal understanding that there are no plans to complete a preliminary waste compatibility assessment prior to a final assessment. Consistent with previous Phase II approvals, EPA is requiring written documentation of information supporting the basis of its approval decisions. Given the absence of at least a preliminary waste compatibility assessment, EPA is requiring physical submission of the assessment for the C-102 Series tanks, not just the notification of availability agreed to in the C-103/C-109 Phase II RBDA approval. EPA is requiring submission 30 days prior to the start of retrieval to ensure adequate time for EPA to review the findings of the assessment, and if warranted, issue any modifications to the Phase II RBDA approval. In addition, 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. No later than the start of retrieval activities for each C-102 Series tank, 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. These plans may be based in whole or part on closure requirements 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. It is EPA's informal understanding that C-102 Series tank retrievals are not likely to start shortly after the effective date of the Phase II approval, so that adopting the TPA-required "prior to retrieval" submission schedule is reasonable.

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. This report shall specifically include results reasonably available at the time of submission from the High-Resolution Resistivity (HRR) demonstration(s) described in Section 4.2.1.3 of the C-102 Series TWRWP Rev. 3 as approved by Ecology.

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 notes that results of the initial test of HRR LDMM technology at tank 241-S-102 are not yet available, and neither EPA nor Ecology have made any evaluation or decision with respect to implementation of HRR as a primary LDMM technology, the need for additional HRR tests, or that HRR is not a suitable technology for retrieval LDMM with respect to tanks retrievals subsequent to tank 241-S-102. Based on these results and subsequent decisions, EPA expects that Energy will modify the C-102 Series and other TWRWPs. EPA will then modify this Phase II RBDA approval condition accordingly.

To the extent that HRR technology is applied in test or demonstration mode for retrieval of tanks covered by the C-102 Series TWRWP, EPA is requiring inclusion in the post-retrieval report only those results from the HRR system that are reasonably available for reporting at the time the post-retrieval report or Appendix H exception report are to be submitted. Should this work include testing of HRR pursuant to TPA milestone M-45-00B, EPA is requiring submission of a final HRR test plan report under a separate condition of this approval.

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 RCRA 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 TPA requirements in a way that avoids duplicative administrative processes that may be necessary to ensure consistency between TPA/RCRA 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 C-102 Series tanks required by 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 the C-102 Series tanks, any spills, releases or leaks from C-102 Series tanks 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 in the Phase I/Tank 241-S-102 Phase II approval dated June 2, 2005 and cited as Reference 8 in this C-102

Series RBDA approval), 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 C-102 Series tanks 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 RCRA-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 RCRA 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 the C-102 Series tanks in compliance with applicable rules and requirements prior to submission of documents required by this condition.

7. Energy shall maintain and operate a baseline (drywell monitoring) and supplemental (modified static liquid level monitoring/waste material balance) leak detection, monitoring and mitigation (LDMM) system as documented in Section 4.0 of the C-102 Series TWRWP, RPP-22393, Rev. 3 as approved by Ecology. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2.1 and 4.6 of the C-102 Series TWRWP, including but not limited to high-resolution resistivity (HRR) LDMM deployment documented in Section 4.2.1.3.

EPA is establishing this condition to ensure, to the extent technically practicable, that potential leaks from the C-102 Series tanks are detected during or following retrieval activities. Although Energy's RBDA application provides no basis to conclude that any of the C-102 Series tanks 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-102 Series TWRWP. Should HRR eventually be selected as the primary LDMM technology after completion of demonstration and test activities, EPA may consider more detailed compliance requirements supported by results of these test and demonstration activities.

EPA notes that the combination of drywell monitoring, and liquid level monitoring, represents the best currently available technology for SST leak detection. EPA will be reviewing results of the high-resolution resistivity (HRR) LDMM technology being deployed on a demonstration basis at tanks 241-S-102, 241-C-103 and 241-C-109, as well as the C-102 Series tanks. Should HRR offer improved leak detection performance (minimum detectable leak, time required for detection, etc.), EPA will consider application of HRR to future SST retrievals requiring TSCA authorization for use of DST supernate. See Phase II approval Condition 9.

8. Energy may request changes to schedules specified in these C-102 Series 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. Energy shall submit to the EPA contacts listed in Phase I approval Condition 6 the final report of any high-resolution resistivity (HRR) leak detection test(s) which may be conducted at any or all C-102 Series tanks pursuant to the C-102 TWRWP RPP-22393, Rev. 3, Section 4.2.1 as approved by Ecology and any Ecology-approved test plans as may be applicable. This submission shall be concurrent with submission of the report, if any, to Ecology.

The purpose of this condition is to ensure that data necessary for evaluation of HRR performance as a LDMM technology and whether HRR should be applied to future

retrievals (beyond the initial three-tank demonstration test documented in TPA Milestone M-45-00B and RPP-17101, Rev. 1) within the scope of Energy's RBDA application. EPA notes that results from HRR tests on tank 241-S-102 have note yet been completed, and neither EPA nor Ecology have made any evaluation or decision with respect to implementation of HRR as a primary LDMM technology, the need for additional HRR tests, or that HRR is not a suitable technology for retrieval LDMM. At such time as these decisions may be made, EPA expects that Energy will modify the various TWRPS applicable to work conducted under this RBDA approval through the TPA primary document approval process. Based on such a modified C-102 Series TWRWP, EPA will modify Condition 9 of this Phase II approval accordingly.

EPA also notes that Section 4.2.1 of the C-102 Series TWRWP provides that should HRR be validated before completion of waste retrieval, HRR will, at that time, become the primary leak detection system for these tanks and drywell monitoring will be stopped for the retrieval LDM where HRR is the primary LDM system. If not validated, HRR will not be used for further retrieval LDMM activities, and dry-well monitoring will remain the primary LDMM approach. Based on results of this validation, EPA expects that Energy will modify the C-102 Series TWRWP through the TPA primary document approval process. Based on such a modified C-102 Series TWRWP, EPA will modify Condition 9 of this Phase II approval accordingly.

Finally, EPA notes that no report submission date has been established by Ecology, should there be tests conducted on tanks subsequent to tank 241-S-102 – for purposes of program integration, EPA will defer to Ecology's role as lead regulatory agency overseeing retrieval activities under RCRA authorities to establish appropriate schedules with respect to future retrieval activities.

Phase II (Tank-Specific) Conditions – Tanks 241-C-103 and 241-C-109

1) For retrieval of tanks 241-C-103 and 241-C-109, the spatial boundaries of this approval shall be the 241-AN-06A pit for supernate retrieved from tank 241-AN-106, extending to (following the direction of supernate flow/retrieved slurry) the connection to tank 241-AN-106 return riser for slurry returned from tanks 241-C-103 and 241-C-109 to tank 241-AN-106. Tanks 241-C-103 and 241-C-109 are explicitly included within the boundaries of this approval.

2) All equipment used for carrying out retrieval activities external to tanks 241-C-103 and 241-C-109 shall comply with the requirements of 40 CFR 265.191 through 196. Tanks 241-C-103 and 241-C-109 proper and any equipment used for retrieval activities internal to these tanks 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 4.2.2, and 4.6 of the C-103/C-109 TWRWP, RPP-21895, Rev. 3.

3) Energy shall complete a formal waste compatibility assessment of wastes in tanks 241-C-103 and 241-C-109 according to HNF-SD-QM-OCD-015 and Section 3.1.1 of the C-103/C-109 TWRWP, RPP-21895, Rev. 3. 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 tanks 241-C-103 and 241-C-109. These plans may be based in whole or part on closure requirements 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. This report shall specifically include results reasonably available at the time of submission from the High-Resolution Resistivity (HRR) pilot test described in Section 4.2.1.3 of the C-103/C-109 TWRWP, TPA primary document (RPP-21895, Rev. 3) as approved by Ecology.

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 tanks 241-C-103 and 241-C-109 required by 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 tanks 241-C-103 and 241-C-109, any spills, releases or leaks from tanks 241-C-103 and 241-C-109 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 a baseline (drywell monitoring) and supplemental (modified static liquid level monitoring/waste material balance) leak detection, monitoring and mitigation (LDMM) system as documented in Section 4.0 of the C-103/C-109 TWRWP, RPP-21895, Rev. 3. With respect to this system, Energy shall maintain and conduct retrieval operations pursuant to procedures consistent with Sections 4.2.1 and 4.6 of the C-103/C-109 TWRWP, RPP 21895, Rev. 3

7) Energy may request changes to schedules specified in these tank 241-C-103/241-C-109 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.

8) Energy shall submit to the EPA contacts listed in Phase I approval Condition 6 the final report of high-resolution resistivity (HRR) leak detection test conducted pursuant to the Ecology-approved test plan RPP-17191, Rev. 1, concurrent with submission of this report to Ecology.