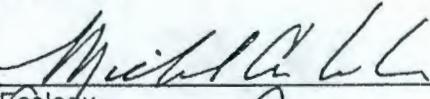
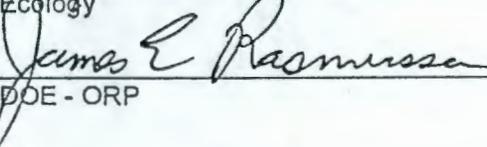
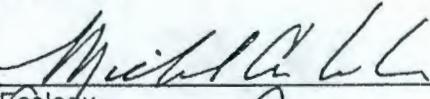
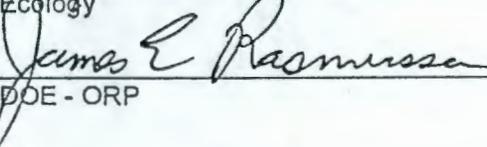
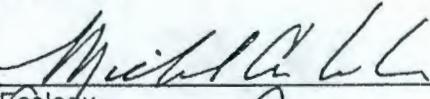
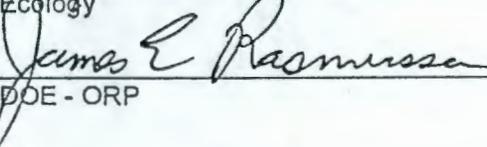


Change Number M-45-03-04	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date June 30, 2003																														
Originator Ecology/DOE-ORP		Phone																														
Class of Change <input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager																																
Change Title Modification of <u>Hanford Federal Facility Agreement and Consent Order</u> (HFFACO) requirements regarding Leak Detection Monitoring and Mitigation (LDMM) demonstrations, specifically deleting LDMM demonstrations in SST S-112 and S-102 and replacing the LDMM demonstration requirement to at least one of the S-105, S-106 and S-103 SST retrieval and closures.																																
Description/Justification of Change Modifications are required due to removing SST S-112 and S-102 from the Consent Decree Interim Stabilization directly to retrieval and closure. The accelerated schedule for both SSTs does not provide any schedule for performing LDMM demonstration.																																
Impact of Change This change request modifies <u>Hanford Federal Facility Agreement and Consent Order</u> (HFFACO) requirements regarding Leak Detection Monitoring and Mitigation (LDMM) demonstrations, specifically deleting LDMM demonstrations in SST S-112 and S-102 and replacing the LDMM demonstration requirement to at least one of the S-105, S-106 and S-103 SST retrieval and closures.																																
Affected Documents The <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, including HFFACO Action Plan Appendix D, DOE's Annual Land Disposal Restrictions Report, DOE's Tank Farm Closure/Post-Closure Workplan Update, and Hanford site internal planning, management, and budget documents (e.g., DOE and DOE contractor Baselines, Baseline Change Control documents).																																
Approvals <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; border-bottom: 1px solid black;"></td> <td style="width: 15%; border-bottom: 1px solid black;">6/30/03</td> <td style="width: 10%; border-bottom: 1px solid black;"><input checked="" type="checkbox"/></td> <td style="width: 15%; border-bottom: 1px solid black;">Approved</td> <td style="width: 10%; border-bottom: 1px solid black;"><input type="checkbox"/></td> <td style="width: 10%; border-bottom: 1px solid black;">Disapproved</td> </tr> <tr> <td>Ecology</td> <td>Date</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;">6/30/03</td> <td style="border-bottom: 1px solid black;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;">Approved</td> <td style="border-bottom: 1px solid black;"><input type="checkbox"/></td> <td style="border-bottom: 1px solid black;">Disapproved</td> </tr> <tr> <td>DOE - ORP</td> <td>Date</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;">EPA</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="border-bottom: 1px solid black;"><input type="checkbox"/></td> <td style="border-bottom: 1px solid black;">Approved</td> <td style="border-bottom: 1px solid black;"><input type="checkbox"/></td> <td style="border-bottom: 1px solid black;">Disapproved</td> </tr> </table>				6/30/03	<input checked="" type="checkbox"/>	Approved	<input type="checkbox"/>	Disapproved	Ecology	Date						6/30/03	<input checked="" type="checkbox"/>	Approved	<input type="checkbox"/>	Disapproved	DOE - ORP	Date					EPA	Date	<input type="checkbox"/>	Approved	<input type="checkbox"/>	Disapproved
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JUL 29 2003

EDMC

M-45-03-04

June 30, 2003

Description/Justification of Change Cont.

Modifications to the M-45 milestone series incorporated into the HFFACO by approval of this M-45-03-04 Change Request are shown here as either shaded additions, or strikethrough deletions.

MS Number	Milestone Description	Due Date
LEAD AGENCY: ECOLGY		
M-45-03C	<p>COMPLETE FULL SCALE SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION AT SINGLE-SHELL TANK S-112. WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. SELECTED SALTCAKE RETRIEVAL TECHNOLOGY (OR TECHNOLOGIES) MUST SEEK TO IMPROVE UPON THE PAST-PRACTICE SLUICING BASELINE IN THE AREAS OF EXPECTED RETRIEVAL EFFICIENCY, LEAK LOSS POTENTIAL, AND SUITABILITY FOR USE IN POTENTIALLY LEAKING TANKS.</p> <p>THIS DEMONSTRATION SHALL ALSO INCLUDE THE INSTALLATION AND IMPLEMENTATION OF FULL SCALE LEAK DETECTION, MONITORING, AND MITIGATION (LDMM) TECHNOLOGIES. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR DEMONSTRATION AND INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS DEMONSTRATION SHALL BE BY APPROVAL OF DOE AND ECOLOGY.</p> <p>GOALS OF THIS DEMONSTRATION SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 550 CURIES OF MOBILE, LONG-LIVED RADIOISOTOPES AND 99% OF TANK CONTENTS BY VOLUME (PER DOE BEST-BASIS INVENTORY DATA, 8/01/2000).</p>	9/30/2005
M-45-03-T03	<p>SUBMIT S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT.</p> <p>THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A COOPERATIVE RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS S-112 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THE S-112 FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.</p> <p>THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.</p>	12/30/2001 (Completed)
M-45-03D	COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY	5/31/2003

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Description/Justification of Change Cont.

	DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).	(Completed)
	DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.	
M-45-03E	COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.	9/30/2004
M-45-03F	COMPLETE FULL SCALE SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION AT TANK C-104. WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. SELECTED SLUDGE/HARD HEEL TECHNOLOGY (OR TECHNOLOGIES) MUST SEEK TO IMPROVE UPON THE PAST-PRACTICE SLUICING BASELINE IN THE AREAS OF EXPECTED RETRIEVAL EFFICIENCY, LEAK LOSS POTENTIAL, AND SUITABILITY FOR USE IN POTENTIALLY LEAKING TANKS. CONFINED SLUICING IS DEFINED AS THE LOCALIZED ADDITION AND RETRIEVAL OF LIQUIDS AND WASTE. THIS DEMONSTRATION SHALL ALSO INCLUDE THE INSTALLATION AND IMPLEMENTATION OF FULL SCALE LEAK DETECTION, MONITORING, AND MITIGATION (LDMM) TECHNOLOGIES. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR DEMONSTRATION AND INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS DEMONSTRATION SHALL BE BY APPROVAL OF DOE AND ECOLOGY. GOALS OF THIS DEMONSTRATION SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 89 KG OF PLUTONIUM WHICH REPRESENTS APPROXIMATELY 17% OF THE TOTAL PLUTONIUM INVENTORY WITHIN THE SST SYSTEM), AND 99% OF TANK CONTENTS BY VOLUME (PER DOE'S BEST-BASIS INVENTORY DATA OF 8/01/2000).	9/30/2007
M-45-03-T04	SUBMIT C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT. THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS C-104 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.	12/31/2001 (Completed)

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Description/Justification of Change Cont.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

M-45-03G COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL COLD DEMONSTRATION. 6/30/2004

THIS FULL SCALE DEMONSTRATION WILL BE SUFFICIENT TO SUPPORT FINAL DESIGN AND TESTING OF ALL EQUIPMENT, INCLUDING THE LDMM APPROACH USED IN THE ACTUAL SYSTEM. THE DEMONSTRATION MUST ESTABLISH THE PERFORMANCE OF THE EQUIPMENT SPECIFIED IN THE FUNCTIONS AND REQUIREMENTS DOCUMENT. A LETTER REPORT WILL BE SUBMITTED TO ECOLOGY TO DOCUMENT THE RESULTS OF THE COLD DEMONSTRATION.

M-45-03H COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)). 9/30/2004

DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-03I COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). 9/30/2006

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05 RETRIEVE WASTE FROM ALL REMAINING SINGLE-SHELL TANKS. 9/30/2018

COMPLETE WASTE RETRIEVAL FROM ALL REMAINING SINGLE-SHELL TANKS. RETRIEVAL STANDARDS AND COMPLETION DEFINITIONS ARE PROVIDED UNDER THE MAJOR MILESTONE. THE SCHEDULE REFLECTS RETRIEVAL ACTIVITIES ON A FARM-BY-FARM BASIS. IT ALSO ALLOWS FLEXIBILITY TO RETRIEVE TANKS FROM VARIOUS FARMS IF DESIRED TO SUPPORT SAFETY ISSUE RESOLUTION, PRETREATMENT OR DISPOSAL FEED REQUIREMENTS, OR OTHER PRIORITIES.

M-45-05A COMPLETE INITIAL WASTE RETRIEVAL FROM TANK S-102. 9/30/2006

THE S-102 INITIAL WASTE RETRIEVAL TECHNOLOGY (OR TECHNOLOGIES) WILL BE SELECTED BASED ON THE PRINCIPLE CRITERIA OF MAXIMIZING THE RETRIEVAL OF MOBILE, LONG-LIVED RADIOISOTOPES AND NON-RADIOLOGICAL HAZARDOUS CONSTITUENTS. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS INITIAL RETRIEVAL SHALL BE BY APPROVAL OF DOE AND ECOLOGY.

GOALS OF THIS INITIAL WASTE RETRIEVAL PROJECT SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 490 CURIES OF MOBILE, LONG-LIVED RADIOISOTOPES AND 99% OF TANK CONTENTS BY VOLUME (PER DOE BEST-BASIS INVENTORY DATA, 8/01/2000).

COMPLETION OF S-102 INITIAL WASTE RETRIEVAL IS SUBJECT TO SAFE STORAGE SPACE AVAILABILITY CONSISTENT WITH M-45-00B.

M-45-05-T16 SUBMIT S-102 INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT. 10/30/2002 (Completed)

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Description/Justification of Change Cont.

THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL ALSO PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS S-102 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

M-45-05B COMPLETE S-102 INITIAL RETRIEVAL PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)) 3/31/2004

THE DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-05C COMPLETE S-102 INITIAL WASTE RETRIEVAL PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). 11/30/2005

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05D ESTABLISH COMPLETION DATE FOR THE SECOND TANK, INITIAL WASTE RETRIEVAL. 12/31/2002 (Completed)

THIS SECOND FULL SCALE INITIAL WASTE RETRIEVAL PROJECT WILL BE CONDUCTED UNDER THE ONGOING CRITERIA OF MAXIMIZING THE RETRIEVAL TO SAFE STORAGE OF MOBILE, LONG LIVED RADIOISOTOPES AND PRINCIPLE NON-RADIOLOGICAL HAZARDOUS CONSTITUENTS. COMPLETION OF THIS INITIAL RETRIEVAL MILESTONE SHALL BE BY APPROVAL OF DOE AND ECOLOGY.

HIGH RISK WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECTS

M-45-13 INTERIM COMPLETION OF TANK S-112 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/30/2006

THE S-112 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

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Description/Justification of Change Cont.

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT, REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE S-112 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-13-T01 FINAL COMPLETION OF TANK S-112 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/30/2007

COMPLETION OF THE TANK S-112 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-112 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-14 INTERIM COMPLETION OF TANK C-104 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/30/2008

THE C-104 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT, REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED C-104 SLUDGE/HARD HEEL, CONTAINED SLUICING AND ROBOTIC TECHNOLOGIES WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE C-104 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-14-T01 FINAL COMPLETION OF TANK C-104 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/3/2009

COMPLETION OF THE TANK C-104 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED C-104 WASTE RETRIEVAL AND

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Description/Justification of Change Cont.

CLOSURE DEMONSTRATION PLAN.

M-45-15 INTERIM COMPLETION OF TANK S-102 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/30/2007

THE S-102 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT, REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED S-102 INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE S-102 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-15-T01 FINAL COMPLETION OF TANK S-102 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 6/30/2008

COMPLETION OF THE TANK S-102 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-102 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-16 INTERIM COMPLETION OF TANK S-105, S-106, AND S-103 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. 7/31/2010

THE S-105, S-106, AND S-103 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET AND DOCUMENTED FOR EACH OF THE TANKS:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT, REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED, AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H. A REQUEST MAY BE MADE FOR EACH

AND/OR ALL TANKS.

5 THIS DEMONSTRATION SHALL ALSO INCLUDE THE INSTALLATION AND IMPLEMENTATION OF FULL SCALE EXTERNAL-TANK LEAK DETECTION MONITORING AND MITIGATION (LDMM) TECHNOLOGIES FOR THESE THREE TANKS. THE BASELINE LDMM SYSTEM (I.E., DRYWELL LOGGING) IS TO BE SUPPLEMENTED USING AN EXTERNAL-TANK ELECTRICAL RESISTIVITY (ER) METHOD. THE ELECTRICAL RESISTIVITY SYSTEM WILL BE DESIGNED FOR IMPLEMENTATION AT THE THREE TANKS AND FULLY DEPLOYED AT THE FIRST TANK TO BE RETRIEVED. CRITERIA FOR THE DEMONSTRATION AT THE FIRST TANK SHALL BE AGREED TO BY DOE AND ECOLOGY BEFORE THE TECHNOLOGY IS INSTALLED. BASED ON THE PERFORMANCE OF THE FIRST DEMONSTRATION:

- IF THE PARTIES AGREE THAT THE METHOD IS SUITABLE, ER WILL BE DEPLOYED IN THE SUBSEQUENT SALTCAKE RETRIEVAL TANKS.
- IF THE PARTIES DO NOT AGREE THAT ER IS SUITABLE FOR SUBSEQUENT SALTCAKE RETRIEVALS, OR IF THE DATA IS INCONCLUSIVE, ECOLOGY WILL REQUIRE APPROPRIATE LDMM TECHNOLOGY IN LIEU OF OR IN ADDITION TO ER.

M-45-16-T01	FINAL COMPLETION OF TANK S-105, S-106, AND S-103 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT. COMPLETION OF THE TANK S-105, S-106, AND S-103 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.	7/31/2011
M-45-05-T17	SUBMIT S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT. THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE) FOR EACH TANK. THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL ALSO PROVIDE, AS A SEPARATE EVALUATION FOR EACH OF THE THREE TANKS, ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. THE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT WILL DOCUMENT ALL PERTINENT RETRIEVAL AND CLOSURE REQUIREMENTS, E.G., THOSE SPECIFIC TO THE EXTENT OF RETRIEVAL NECESSARY TO ALLOW CLOSURE. DOE WILL SUBMIT ITS LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT. THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.	4/30/2005
M-45-05E	COMPLETE S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS	6/30/2007

M-45-03-04
June 30, 2003

Description/Justification of Change Cont.

INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK
DETECTION MONITORING AND MITIGATION (LDMM) FOR EACH TANK).

THE DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS
BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-05F COMPLETE S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE
DEMONSTRATION PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL
SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING
AND MITIGATION). 9/30/2008

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS
EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05G-T01 COMPLETE S-105, S-106, AND S-103 WASTE RETRIEVAL. 10/31/2009

WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE
TECHNOLOGY (OR TECHNOLOGIES) SELECTED. RETRIEVAL SHALL RETRIEVE
AS MUCH WASTE AS TECHNICALLY POSSIBLE, WITH A REMAINING RESIDUAL OF
NO MORE THAN 360 CUBIC FEET (CU. FT.).