

**PERMIT FOR
DANGEROUS AND OR MIXED WASTE RESEARCH, DEVELOPMENT, AND
DEMONSTRATION**

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354-1670
Telephone: (509) 372-7950

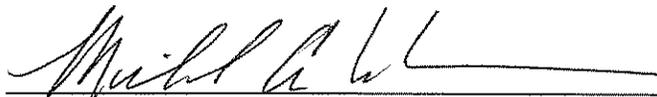
This Permit is issued in accordance with the applicable provisions of the Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW), and the regulations promulgated hereunder in Chapter 173-303 Washington Administrative Code (WAC).

ISSUED TO: United States Department of Energy
Office of River Protection
Owner/Operator
P.O. Box 450
Richland, Washington 99354

Co-Permittee: CH2M HILL Hanford Group, Inc.
Co-Operator
P.O. Box 1500
Richland, Washington 99354

This Permit is effective as of January 12, 2005, and shall remain in effect until December 13, 2007, unless modified or revoked and reissued under WAC 173-303-830(3), or terminated under WAC 173-303-809(3) or WAC 173-303-830(5). This Permit shall not exceed four hundred (400) operating days of the Dangerous and or Waste Research, Development, and Demonstration Activity authorized by this permit.

ISSUED BY: WASHINGTON STATE DEPARTMENT OF ECOLOGY



Michael A. Wilson, Program Manager
Nuclear Waste Program
Washington State Department of Ecology

Date Signed 12/13/04

Date Issued: December 13, 2004
Expiration Date: December 13, 2007
90% Design Modification

Permit No.: WA 7890008967
Page 2 of 119
July 24, 2006

This page intentionally left blank.

TABLE OF CONTENTS

INTRODUCTION5
LIST OF ATTACHMENTS7
DEFINITIONS.....9
ACRONYMS.....11
PART I – STANDARD CONDITIONS14
 I.A. EFFECT OF PERMIT14
 I.B. GENERAL PERMIT CONDITIONS.....14
 I.C. PERMIT ACTIONS.....14
 I.D. SEVERABILITY15
 I.E. DUTIES AND REQUIREMENTS.....15
 I.F. MONITORING, RECORDS, AND REPORTING17
 I.G. COMPLIANCE NOT CONSTITUTING DEFENSE19
 I.H. TRANSFER OF PERMITS19
 I.I. PERMIT EXPIRATION.....19
 I.J. REPORTS, NOTIFICATIONS, AND SUBMISSIONS19
 I.K. SIGNATORY REQUIREMENTS.....20
 I.L. CONFIDENTIAL INFORMATION20
 I.M. PERMIT RENEWAL20
PART II – GENERAL FACILITY CONDITIONS20
 II.A. GENERAL WASTE MANAGEMENT20
 II.B. WASTE ANALYSIS22
 II.C. PREPAREDNESS AND PREVENTION.....26
 II.D. INSPECTION PLAN.....28
 II.E. TRAINING28
 II.F. CONTINGENCY PLAN29
 II.G. RECORDKEEPING AND REPORTING30
 II.H. CLOSURE34
 II.I. EQUIVALENT MATERIALS36
 II.J. CLEANUP OF RELEASED MATERIALS.....37
 II.K. FINANCIAL ASSURANCE AND LIABILITY REQUIREMENTS37

90% Design Modification	July 24, 2006
II.L. LAND DISPOSAL RESTRICTIONS	38
II.M. AIR EMISSIONS.....	38
PART III – CONTAINERS	38
III.A. CONTAINER MANAGEMENT AREAS AND ACCUMULATION LIMITS	38
III.B. CONTAINER STORAGE AREAS DESIGN AND CONSTRUCTION.....	39
III.C. CONTAINER MANAGEMENT PRACTICES	39
III.D. IDENTIFICATION OF CONTAINERS AND CONTAINER STORAGE AREAS	40
III.E. INSPECTIONS AND RECORDKEEPING	41
III.F. CLOSURE	41
III.G. COMPLIANCE SCHEDULES	41
PART IV – TANKS	44
IV.A. TANK SYSTEMS	44
PART V – DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS).....	56
V.A. GENERAL CONDITIONS	56
V.B. PERFORMANCE STANDARDS	62
V.C. OPERATING CONDITIONS	62
V.D. INSPECTION REQUIREMENTS	64
V.E. MONITORING REQUIREMENTS.....	64
V.F. RECORDKEEPING REQUIREMENTS	64
V.G. CLOSURE	65
V.H. PHASE 1 AND PHASE 2 CAMPAIGNS	65
V.I. COMPLIANCE SCHEDULES	66
PART VI – FACILITY SUBMITTAL SCHEDULE.....	95

TABLES

Table III.1.	Description of Demonstration Bulk Vitrification System (DBVS) Facility Container Storage Areas	53
Table IV.1.	Demonstration Bulk Vitrification System (DBVS) Facility Tank Systems Description	65
Table IV.2.	Demonstration Bulk Vitrification System (DBVS) Facility Tank Systems Secondary Containment System Including Sumps and Floor Drains	67
Table IV.3.	Demonstration Bulk Vitrification System (DBVS) Facility Tank Systems Process and Leak Detection System Instruments and Parameters	70
Table V.1.	Demonstration Bulk Vitrification System (DBVS) – Phase 1 Description (Non-Major Components [e.g., pumps, filters, fans, compressors, etc.] not specifically listed)	94
Table V.2.	Demonstration Bulk Vitrification System (DBVS) – Phase 1 Secondary Containment Systems Including Sumps and Floor Drains	101
Table V.3.	Demonstration Bulk Vitrification System (DBVS) – Phase 1 Process and Leak Detection System Instruments and Parameters	102
Table V.4.	Demonstration Bulk Vitrification System (DBVS) – Phase 2 Description (Non-Major Components [e.g., pumps, filters, fans, compressors, etc.] not specifically listed)	103
Table V.5.	Demonstration Bulk Vitrification System (DBVS) – Phase 2 Secondary Containment Systems Including Sumps and Floor Drains	109
Table V.6.	Demonstration Bulk Vitrification System (DBVS) – Phase 2 Process and Leak Detection System Instruments and Parameters	110
Table V.7.	Maximum Feed and Feed-Rates to Demonstration Bulk Vitrification System (DBVS) – Phase 1 and 2	111
Table V.8.	Demonstration Bulk Vitrification System (DBVS) Emergency Parameter Control/Response System (RESERVED)	112
Table VI.1.	Required Submittals and Compliance Schedule	114

Date Issued: December 13, 2004
Expiration Date: December 13, 2007
90% Design Modification

Permit No.: WA 7890008967
Page 6 of 119
July 24, 2006

This page intentionally left blank.

INTRODUCTION

Permittees:

Owner/Operator: United States Department of Energy
Office of River Protection

Facility Manager/Co-Operator: CH2M HILL Hanford Group, Inc.

EPA/State Identification Number: WA 7890008967

Pursuant to:

Chapter 70.105 Revised Code of Washington (RCW), the Hazardous Waste Management Act of 1976, as amended, and regulations codified in Chapter 173-303-809 Washington Administrative Code (WAC).

A Permit is issued to the United States Department of Energy (USDOE), Office of River Protection (ORP) and CH2M HILL Hanford Group, Inc. (CH2M) (hereinafter called the Permittees), to operate a Dangerous Waste Research, Development, and Demonstration Facility for the Demonstration Bulk Vitrification System (DBVS Facility) west of the 241-S Tank Farm in the 200 West Area of the Hanford Site. This Permit is not a part of the Dangerous Waste Portion of the *Resource Conservation and Recovery Act of 1976* (RCRA) Permit for the Treatment, Storage, and Disposal of Dangerous Waste Permit issued to USDOE March 28, 2000.

The Permittees must comply with all terms and conditions set forth in this Permit and with Permit Attachments AA through LL. When the Permit and the attachments are in conflict, the wording of the Permit will prevail. The Permittees shall also comply with all applicable state regulations, including Chapter 173-303 WAC, and those specified in the Permit. Any procedure, method, data, or information contained in this document that relates to the radioactive source, byproduct material, and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) is not provided for the purpose of regulating such components under the authority of this Permit and Chapter 70.105 RCW.

“Applicable state and federal regulations” are those which are in effect on the date of final administrative action on this Permit and any self-implementing statutory provisions and related regulations which, according to the requirements of RCRA (as amended) or state law, are automatically applicable to the Permittees’ dangerous waste management activities notwithstanding the conditions of this Permit.

This Permit is based upon the Administrative Record, as required by WAC 173-303-840. The Permittees’ failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittees’ misrepresentation of any relevant facts at any time, shall be

90% Design Modification

July 24, 2006

grounds for the termination or modification of this Permit and/or initiation of an enforcement action, including criminal proceedings. The Permittees shall inform the Director of the Washington State Department of Ecology (hereafter called the Director) of any deviations from permit conditions or changes from information provided in the Research, Development, and Demonstration Permit Application. In particular, the Permittees shall inform the Director of any proposed changes that might affect the ability of the Permittees to comply with applicable regulations and permit conditions or that alter any of the conditions of the Permit in any way.

The Washington State Department of Ecology (hereafter called Ecology) will enforce all conditions of this Permit, based on federal regulations for which the state of Washington has received final authorization and all conditions that are state-only requirements (i.e., required by state regulations, but not by federal regulations). Any challenges of any permit condition that concern state requirements (i.e., conditions of this Permit for which the state of Washington is authorized or conditions which are state-only requirements) shall be appealed to the Pollution Control Hearings Board in accordance with WAC 173-303-845. In the event that Ecology does not maintain its authorization for the state Hazardous Waste Program under RCRA, then the United States Environmental Protection Agency (EPA) will enforce all permit conditions except those that are state-only requirements.

LIST OF ATTACHMENTS

The following listed documents are hereby incorporated, in their entirety, by reference into this Permit. Some of the documents are excerpts from the Permittees' DBVS Facility Research, Development, and Demonstration Dangerous Waste Permit Application dated May 10, 2004 (document #04-TED-036); hereafter called the Permit Application. Ecology has, as deemed necessary, modified specific language in the attachments. These modifications are described in the permit conditions (Parts I through V), and thereby supersede the language of the attachment. These incorporated attachments are enforceable conditions of this Permit, as modified by the specific permit conditions, except for Attachment 1 which is included in this Permit for information purpose only;

Attachment AA	Facility Description - Section 2 of the Permit Application
Attachment BB	Waste Analysis Plan - Section 6 of the Permit Application; and Analytical Methods - Appendix D of the Permit Application
Attachment CC	Personnel Training - Section 8 of the Permit Application
Attachment DD	Contingency Plan - Section 10 of the Permit Application; and Hanford Test and Demonstration Facility Contingency Plan - Appendix C of the Permit Application
Attachment EE	Closure Plan - Section 11 of the Permit Application
Attachment FF	Emergency Preparedness and Prevention – Following Sections of the Permit Application: Section 2 Facility Description Section 4 Bulk Vitrification Test and Demonstration Facility Section 5 Operations Plan Appendix B Process Flow Diagrams Appendix F ICV [®] Container Refractory Information
Attachment GG	Recordkeeping and Reporting - Section 9 of the Permit Application
Attachment HH	RESERVED
Attachment II	Inspection Plan - Section 7 of the Permit Application

90% Design Modification

July 24, 2006

Attachment JJ Container Management – Following Sections and Figures of the Permit Application:

Section 2.3.2	Waste Retrieval and Storage
Section 2.4	Treated Waste Packaging
Section 4.2.9	Vitrification Container Preparation
Section 4.2.10	In-Container Vitrification
Section 4.2.11	Post-Vitrification Activities
Section 7.2.4	Weekly Inspections
Section 7.4	Corrective Action
Figure 2-2	Test and Demonstration Facility Site and Equipment Layout – Page 1
Figure 7-1	Typical Inspection Checklist for Waste Storage Area
Figure B-1	Phase 1 Process Flow Diagram – Page 1
Figure B-4	Phase 2 Process Flow Diagram – Page 1
Appendix F	ICV [®] Container Refractory Information
Appendix 1	Container Foundations
Appendix 2	Waste Receipt System – Reserved
Appendix 3	Waste Dryer System – Reserved
Appendix 4	Secondary Waste System – Reserved
Appendix 5	Dried Waste Handling System – Reserved
Appendix 6	In-Container Vitrification System
Appendix 7	Off-Gas Treatment System - Reserved

Attachment KK Tank Management – Following Sections, Figures, and Appendices of the Permit Application:

Section 2.2.1	Bulk Vitrification System Components
Section 2.3.2	Waste Retrieval and Storage
Section 2.3.3	Waste Transfer
Section 2.6	Secondary Wastes
Section 4	Bulk Vitrification Test and Demonstration Facility
Section 7.2.3	Daily Inspections
Section 7.4	Corrective Action
Section 7.5	Recordkeeping
Figure 2-2	Test and Demonstration Facility Site and Equipment Layout – Page 1
Figure 2-4	Waste Retrieval System for Phase 1 and Phase 2
Figure 7-2	Typical Inspection Checklist for Waste Tank Storage Area
Appendix B	Process Flow Diagrams
Appendix F	ICV [®] Container Refractory Information
Appendix 1	Tank Foundations
Appendix 2	Waste Receipt System
Appendix 3	Waste Dryer System

90% Design Modification

July 24, 2006

Appendix 4	Secondary Waste System
Appendix 5	Dried Waste Handling System
Appendix 6	In-Container Vitrification System - Reserved
Appendix 7	Off-Gas Treatment System

Attachment LL Demonstration Bulk Vitrification System - Following Sections and Appendices of the Permit Application:

Section 4	Bulk Vitrification Test and Demonstration Facility
Section 5	Operations Plan
Appendix A	Draft Test Matrix and Objectives
Appendix B	Process Flow Diagrams
Appendix E	Emergency Condition Parameter Limit Values
Appendix F	ICV® Container Refractory Information
Appendix 1	DBVS Foundations
Appendix 2	Waste Receipt System- Reserved
Appendix 3	Waste Dryer System
Appendix 4	Secondary Waste System – Reserved
Appendix 5	Dried Waste Handling System
Appendix 6	In-Container Vitrification System
Appendix 7	Off-Gas Treatment System

Attachment 1

Section 1.0	Introduction
Section 1.1	Regulatory Basis
Section 1.2	Facility Owner and Operator Information
Section 1.3	Background Information
Section 1.4	Purpose of Test and Demonstration Project
Section 1.5	Project Objectives
Section 1.6	Justification for Project
Section 1.7	Planned Scale of Operation
Section 1.8	Other Facility Permits

This page intentionally left blank.

DEFINITIONS

For purposes of this joint Permit, the following definitions shall apply:

- a. The term “**Batch**” means a quantity of material prepared in the mixer/dryer that consists of tank waste, simulants, soil, and/or additives that are transferred into the ICV® container for treatment.
- b. The term “**Blending**” means the mixing of the untreated waste with simulants that mimic certain characteristics of the untreated waste.
- c. The term “**Business Day**” means calendar day, excluding weekends and state and federal holidays.
- d. The term “**Calendar Day**” means any day, including state and federal holidays.
- e. The term “**Campaign**” means the receipt, processing, and vitrification of waste into a single ICV® container. Multiple batches from the mixer/dryer may be transferred into an ICV® container.
- f. The term “**Campaign Plan**” means a written plan for each campaign that is developed by the Permittees to include the information required of this Permit, that is submitted to Ecology for review and approval.
- g. The term “**Dangerous Waste**” means a waste designated in WAC 173-303-040 through 173-303-100 as dangerous, or extremely hazardous, or mixed waste.
- h. The term “**Director**” means the Director of the Washington State Department of Ecology or a designated representative.
- i. The term “**DBVS Facility**” means that property identified in the physical description of the area (including all contiguous land, structures, appurtenances, and improvements) used to manage dangerous and/or mixed waste. This property description is as set forth in Attachment AA of this Permit and includes the DBVS listed in Permit Tables V-1 and V-4.
- j. The term “**Ecology**” means the Washington State Department of Ecology (with the address as specified on page one of this Permit).
- k. The term “**Hazardous Waste**” means a waste as defined in WAC 173-303-040.
- l. The term “**High Winds**” means winds that are 85 miles per hour, or greater, as identified in “Demonstration Bulk Vitrification System Specification, Rev. 2” (RPP-17403) that is referenced in the Permit Application.
- m. The term “**ICV® Container**” or “**ICV® Box**” means a steel box approximately 3.0 m (10 feet) high, 2.4 m (8 feet) wide, and 7.3 m (24 feet) long.

- n. The term “**ICV® Package**” means a complete ICV® container that includes refractory materials, waste and/or stimulant, glass formers, electrodes, and lid.
- o. The term “**Independent Qualified Registered Professional Engineer (IQRPE)**” means a person who is licensed by the state of Washington, or a state which has reciprocity with the state of Washington as defined in RCW 18.43.100, and who is not an employee of the owner or operator of the facility for which construction or modification certification is required. A qualified professional engineer is an engineer with expertise in the specific area for which a certification is given (WAC 173-303-040).
- p. The term “**Operating Day**” means any fraction of a calendar day when conducting “RD&D Treatment Activity” at the DBVS Facility. For the purposes of accounting for an “Operating Day,” only “RD&D Treatment Activity” must be considered. The following will not be included when accounting for operating days: DBVS Facility construction; maintenance, repair, adjustment, or subsequent checkout operation of equipment not performed simultaneously with treatment and storage of dangerous and/or mixed waste; operating the DBVS Facility according to procedures and limits for treatability studies in compliance with WAC 173-303-071(3)(s), DBVS Facility ICV® Box Preparation and Hook-up Activities, prior to discharge of dangerous and/or mixed waste feed to the ICV® container, and DBVS Facility activities after ICV® Package disconnect. If more than one “RD&D Treatment Activity” is conducted at the facility on any given calendar day, that calendar day shall be counted as one operating day.
- q. The term “**Permittees**” means the United States Department of Energy, Office of River Protection, and CH2M HILL Hanford Group, Inc. (with the addresses as specified on page one of this Permit).
- r. The term “**RD&D Operations**” means the DBVS Facility.
- s. The term “**Test and Demonstration Facility**” means the DBVS Facility permitted under this RD&D Permit that is located west of the 241-S Tank Farm where the Bulk Vitrification System will be tested and demonstrated.
- t. The term “**DBVS**” as defined in Tables V.1. and V.4.
- u. The term “**Permit**” means the DBVS Research, Development, and Demonstration Permit issued by the Washington State Department of Ecology pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC.
- v. All definitions contained in WAC 173-303-040 are hereby incorporated, in their entirety, by reference into this permit. Any of the definitions used above, (a) through (u), shall supersede any definition of the same term given in WAC 173-303-040. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

ACRONYMS

AEA	<i>Atomic Energy Act of 1954</i>
ALARA.....	as low as reasonably achievable
API.....	American Petroleum Institute
ASCE	American Society of Civil Engineers
AWFCO	automatic waste feed cut-off
AWTE.....	ancillary waste transfer enclosure
BACT.....	best available control technology
BBI.....	Best Basis Inventory
CERCLA.....	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
CEM.....	continuous emission monitoring
CEMS.....	continuous emission monitoring system
CFR.....	<i>Code of Federal Regulations</i>
CH2M or CH2M HILL.....	CH2M HILL Hanford Group, Inc.
Ci.....	curies
CO.....	carbon monoxide
COCs.....	contaminants of concern
Cs-137.....	cesium-137
DBVS.....	Demonstration Bulk Vitrification System
DRE.....	destruction and removal efficiency
dscf.....	dry standard cubic feet
dscm.....	dry standard cubic meter
DQO.....	Data Quality Objectives
DST.....	double-shell tank
Ecology.....	Washington State Department of Ecology
EHW.....	extremely hazardous waste
EPA.....	United States Environmental Protection Agency
ESP.....	Environmental Simulation Program
ETF.....	Effluent Treatment Facility
FHA.....	final hazard analysis
ft.....	foot
ft ³	cubic foot
gpm.....	gallons per minute
HEPA.....	high-efficiency particulate air
HFFACO.....	<i>Hanford Federal Facility Agreement and Consent Order</i>
HIHTL.....	hose-in-hose transfer line

90% Design Modification

July 24, 2006

HLVIT.....	high-level vitrification
HSWA.....	<i>Hazardous and Solid Waste Amendment of 1984</i>
ICV®.....	in-container vitrification (licensed process)
IDF.....	Integrated Disposal Facility
ILAW.....	immobilized low-activity waste
IQRPE.....	Independent Qualified Registered Professional Engineer
kg.....	kilogram
L.....	liter
lb.....	pound
L/min.....	liters per minute
LAW.....	low-activity waste
LDR.....	Land Disposal Restrictions
m.....	meter
m ³	cubic meter
M.....	molar
min.....	minutes
MS/MSD.....	matrix spike/matrix spike duplicate
MTCA.....	<i>Model Toxics Control Act</i>
Na.....	sodium
NCi.....	nanocuries
NCR.....	Nonconformance Report
NOx.....	nitrogen oxides
NRC.....	Nuclear Regulatory Commission
ORP.....	Office of River Protection
OSHA.....	Occupational Safety and Health Administration
OSWER.....	Office of Solid Waste and Emergency Response
P&P.....	preparedness and prevention
PER.....	Problem Evaluation Request
pH.....	a measure on a scale from 0 to 14 of the acidity or alkalinity of a solution
ppm.....	parts per million
ppmv.....	parts per million by volume
QA/QC.....	Quality Assurance/Quality Control
RCRA.....	<i>Resource Conservation and Recovery Act of 1976</i>
RCW.....	<i>Revised Code of Washington</i>
RD&D.....	research, development, and demonstration
REDOX.....	reduction and oxidation
SAP.....	Sampling and Analysis Plan

90% Design Modification

July 24, 2006

SCR.....	selective catalytic reduction
SO _x	sulfur oxides
SST.....	single-shell tank
TBD.....	to be determined
TEQ.....	toxicity equivalence
TSD.....	treatment, storage, and disposal
UBC	Uniform Building Code
USDOE	United States Department of Energy
USDOE-ORP	United States Department of Energy, Office of River Protection
USDOE-RL.....	United States Department of Energy Richland Operations Office
WAC	<i>Washington Administrative Code</i>
WAP.....	Waste Analysis Plan
WFQ.....	waste form qualification
WRS.....	Waste Retrieval System
WTP	Waste Treatment Plant

This page intentionally left blank.

PART I – STANDARD CONDITIONS

I.A. **EFFECT OF PERMIT**

The Permittees are authorized to store and treat dangerous waste in accordance with the conditions of this Permit and the applicable provisions of Chapter 173-303 WAC. Any storage or treatment of dangerous and/or mixed waste by the Permittees at this facility that is not authorized by this Permit or by WAC 173-303-809 and for which a permit is required under WAC 173-303-800 is prohibited. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege [WAC 173-303-810(8)(b)]. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations [WAC 173-303-810(8)(c)].

I.B. **GENERAL PERMIT CONDITIONS**

I.B.1. The general permit conditions under WAC 173-303-810, and final facility standards under WAC 173-303 as set forth in WAC 173-303-600, are incorporated as specified in this Permit and shall be adhered to by the Permittees. The Permittees shall also comply with any self-implementing statutory provisions, which according to the requirements of state law, are automatically applicable to the Permittees' dangerous and/or mixed waste activity, notwithstanding the conditions of this Permit.

I.B.2. The attachments listed on Permit pages nine (9) and eleven (11) are incorporated by reference into this Permit. Facility operations shall be in accordance with the contents of the Permit attachments, as revised by this Permit.

I.C. **PERMIT ACTIONS**

I.C.1. This Permit may be modified, revoked, or terminated by Ecology for cause as specified in WAC 173-303-830(3), (4), and (5) and WAC 173-303-809. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittees shall not stay the applicability or enforceability of any condition [WAC 173-303-810(7)].

I.C.2. Permittee Initiated Modifications

Permit modifications pursuant to this Permit for dangerous and/or mixed waste, at the request of the Permittees, must be done according to the three-tiered modification system specified in WAC 173-303-830(4) and Condition I.C.3. The permit modification request must include page changes to the Permit, attachments, and Permit Application supporting documentation necessary to incorporate the proposed permit modification and a draft with changes clearly noted in red-line strikeout to Ecology for review and approval.

I.C.3. In addition to other requirements in WAC 173-303-830, within forty-five (45) days of a permit change (i.e., permit modification) being put into effect or approved, the Permittees shall retype the relevant portions of the Permit and attachments, to incorporate the change (if not already reflected in the change pages submitted in the original permit modification request) and submit the reprinted pages. This submittal does not require certification described in WAC 173-303-810(13).

I.C.4. Ecology may order an immediate termination of all operations at the facility at any time it determines that termination is necessary to protect human health and the environment in accordance with WAC 173-303-809(3).

I.D. SEVERABILITY

I.D.1. Effect of Invalidation

The provisions of this Permit are severable. If any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittees shall comply with all conditions of this Permit [WAC 173-303-810(2)], except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under WAC 173-303-804. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of Chapter 173-303 WAC and/or RCRA and is grounds for: a) enforcement action; b) termination of this Permit; c) revocation and re-issuance of this Permit; d) modification of this Permit; or e) denial of a permit renewal application.

I.E.2. Need to Halt or Reduce Activity Not a Defense

A Permittee who has not complied with this Permit, and who subsequently is subject to enforcement actions, may not argue that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit [WAC 173-303-810(4)].

90% Design Modification

July 24, 2006

I.E.3. Duty to Mitigate

The Permittees must take all steps required by Ecology to minimize or correct any adverse impacts on the environment resulting from non-compliance with the Permit. Such mitigation shall not be a defense to enforcement [WAC 173-303-810(5)].

I.E.4. Proper Operation and Maintenance

The Permittees shall at all times properly operate and maintain all facilities and all systems of treatment and control which are installed or used by the Permittees to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control (QA/QC) procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit [WAC 173-303-810(6)].

I.E.5. Duty to Provide Information

The Permittees shall furnish to Ecology, within a reasonable time, any information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittees shall also furnish to Ecology, upon request, copies of records required to be kept by this Permit [WAC 173-303-810(9)].

I.E.6. Inspection and Entry

Pursuant to WAC 173-303-810(10), the Permittees shall allow representatives of Ecology upon the presentation of proper credentials to:

I.E.6.a. During operating hours, and at all other reasonable times, enter the DBVS Facility or any unit or area within the DBVS Facility, where regulated activities or equipment are located or conducted, or where records must be kept under the conditions of this Permit;

I.E.6.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

I.E.6.c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

I.E.6.d. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by state law as amended, any substances or parameters at any location.

I.E.7. Anticipated Non-Compliance

The Permittees shall give advance notice to Ecology of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements. Prior to the implementation of the planned change(s), the Permittee must receive Ecology approval.

I.E.8. Reporting Planned Changes

The Permittees shall give advanced notice to Ecology, as soon as possible, of any planned physical alterations or additions to the facility subject to this Permit. Such notice does not authorize any noncompliance with, or modification of, this Permit.

I.E.9. Certification of Construction or Modification

The Permittees may not commence treatment or storage of dangerous and/or mixed waste in any new or modified portion of the facility until the Permittees have submitted to Ecology, by certified mail or hand delivery:

I.E.9.a. A letter signed by the Permittees and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

I.E.9.a.i Permittees have submitted copies of all IQRPE installation reports to Ecology;

I.E.9.a.ii Permittees have submitted and Ecology has approved all updates to Permit to incorporate all missing or incomplete information identified by IQRPE Design Assessment Reports and Ecology's RCRs; and

I.E.9.a.iii. Ecology has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit; or

I.E.9.a.iv. Ecology has either waived the inspection or has not, within fifteen (15) business days of the receipt of the Permittees' letter, notified the Permittees of intent to inspect.

I.E.10. Other Information

Whenever the Permittees become aware that they failed to submit relevant facts in the Permit Application or submitted incorrect information in a Permit Application or in any report to Ecology, the Permittees shall promptly submit such facts or information [WAC 173-303-810(14)(h)].

90% Design Modification

July 24, 2006

I.F. MONITORING, RECORDS, AND REPORTING

- I.F.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from WAC 173-303-110, or an equivalent method approved by Ecology. Laboratory methods must be those specified in WAC 173-303-110(3)(a), other alternate methods approved in this Permit (e.g., Permit Attachment BB), or an equivalent method in accordance with Permit Condition I.F.2. of this Permit.
- I.F.2. The Permittees may substitute analytical methods that are equivalent or superior to those specifically approved for use in this Permit in accordance with the following:
- I.F.2.a. The Permittees must submit to Ecology a request for substitution of analytical method(s) specifically approved for use in this Permit. The request shall provide information demonstrating that the proposed method(s) requested to be substituted are equivalent or superior in terms of sensitivity, accuracy, and precision (i.e., reproducibility); and
- I.F.2.b. The Permittee receives a written approval from Ecology for the substitution of analytical method(s). Such approval shall not require a permit modification under WAC 173-303-110.
- I.F.3. Pursuant to WAC 173-303-810(11), records of monitoring information shall specify:
- I.F.3.a. The dates, exact place, and times of sampling or measurements;
- I.F.3.b. The individuals who performed the sampling or measurements;
- I.F.3.c. The date(s) analyses were performed;
- I.F.3.d. The individuals who performed the analyses;
- I.F.3.e. The analytical techniques or methods used; and
- I.F.3.f. The results of such analyses, including the QA/QC results and requirements.
- I.F.4. Immediate Reporting
- The Permittees shall immediately report to Ecology any release, fire, explosion, natural disaster, or incident of noncompliance with this Permit that may endanger human health or the environment. This reporting shall meet the requirements in WAC 173-303-360(2)(d) and WAC 173-303-810(14)(F).

90% Design Modification

July 24, 2006

I.F.5. Incident Reporting

Within five (5) calendar days of an incident that requires implementation of the Contingency Plan, the Permittees shall submit a written report of the incident to the Director meeting the requirements of WAC 173-303-360(2)(k) and WAC 173-303-810(14)(f).

I.F.6. The Permittees shall report to Ecology all incidents of noncompliance with this Permit, other than incidents specified in Permit Conditions I.F.3., I.F.4., and I.F.5., every three (3) months. These reports shall meet the requirements in WAC 173-303-810(14)(g).

I.F.7. Within thirty (30) days of a release to the environment from a dangerous waste tank system, the Permittees must send a written report that complies with WAC 173-303-640(7)(d)(iii).

I.G. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under any state or federal laws governing protection of public health or the environment. However, compliance with terms of this Permit does constitute a defense to any action alleging failure to comply with applicable standards upon which this Permit is based, or failure to operate under a permit required by WAC 173-303-800 with respect to those activities authorized by this Permit.

I.H. TRANSFER OF PERMITS

This Permit is not transferable to any person, except after notice to Ecology. In such instances, Ecology will require modification or revocation and reissuance of the Permit pursuant to WAC 173-303-830(2)(b).

I.I. PERMIT EXPIRATION

This Permit and all conditions herein are in effect as of the “effective date” as defined in the definitions of the Permit and will remain in effect:

I.I.1. For three hundred and sixty five (365) operating days with a maximum permit renewal for a duration of thirty-five (35) operating days; or

I.I.2. For three (3) years, whichever is earlier.

I.J. REPORTS, NOTIFICATIONS, AND SUBMISSIONS

90% Design Modification

July 24, 2006

All reports, notifications, or other submissions that are required by this Permit to be submitted to Ecology or the Director shall be sent certified mail or hand-delivered to:

Program Manager, Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354-1670
Telephone: (509) 372-7950

The phone number and address may change, and such changes will be provided by Ecology. Such changes will not require a permit modification.

I.K. SIGNATORY REQUIREMENTS

All final reports that are required by this Permit to be submitted to Ecology shall be signed and certified in accordance with WAC 173-303-810(12), (13), and (14).

I.L. CONFIDENTIAL INFORMATION

Any information submitted by the Permittees to Ecology may be claimed as confidential by the Permittees in accordance with applicable provisions of WAC 173-30-810(15).

I.M. PERMIT RENEWAL

If the Permittees wish to continue the activities authorized by this Permit beyond this Permit's expiration date, the Permittees must apply for a final facility permit pursuant to WAC 173-303-806.

This page intentionally left blank.

PART II – GENERAL FACILITY CONDITIONS

II.A. GENERAL WASTE MANAGEMENT

- II.A.1. The Permittees are authorized to accept dangerous and/or mixed waste only from:
- II.A.1.a. Tank 241-S-109 that does not exceed the criteria listed in Permit Attachment BB, as specified in the Ecology approved campaign plan, and as specified on Permit Tables V.7 and V.8.
- II.A.2. During operations of the DBVS, pursuant to Permit Part V, processing of materials (including simulants) in the DBVS that would designate as dangerous waste is fully subject to the requirements of this Permit, excluding the DBVS Facility Waste Receipt System (WRS) and DBVS tank systems as identified in Table IV.1. This exclusion does not apply to mixed waste.
- II.A.3. Feed to the DBVS mixer/dryer and the ICV® container(s), limited as specified in Permit Attachments BB and LL, Permit Tables V.7 and V.8, and the Ecology approved DBVS Campaign Plan.
- II.A.4. Air pollution control devices and capture systems in the DBVS Facility shall be maintained and operated so as to minimize the emissions of air contaminants and to minimize additional air emission that may occur during process upsets. Procedures for ensuring that the above equipment is properly operated and maintained, so as to minimize the emission of air contaminants and minimize additional air emissions that may occur during process upsets, shall be established and followed in accordance with the Ecology approved DBVS Campaign Plan.
- II.A.5. The Permittees shall ensure that for all dangerous and/or mixed waste areas, systems, and units contained in the DBVS Facility that the DBVS offgas treatment systems shall be in operation prior to waste being introduced into these dangerous and/or mixed waste areas, systems, and units contained in the DBVS Facility. At any time the offgas treatment system ceases to operate or produces insufficient vacuum to recover emissions from the areas, systems, or units, the Permittees shall not commence any new treatment activities within the dangerous and/or mixed waste areas, systems, or units contained in the DBVS Facility and take measures to minimize evolution of emissions from on-going treatment, and shall not receive new dangerous and/or mixed waste shipments into the DBVS Facility. The Permittees shall not re-commence new treatment activities until the DBVS Facility offgas treatment systems are operational and producing sufficient vacuum to recover emissions.
- II.A.6. Containment systems for all waste management operations shall be constructed, operated, and maintained to ensure no spilled waste or storm water migrates outside

90% Design Modification

July 24, 2006

of the containment areas. In particular, the following waste management operations must be within such containment areas:

- II.A.6.a. Loading and unloading of dangerous and/or mixed waste; and
- II.A.6.b. Staging and processing of dangerous and/or mixed waste.
- II.A.7. Design and Construction of the Facility

The Permittees shall conduct all construction subject to this Permit in accordance with the approved designs, plans, and specifications that are required by this Permit, except as specified in Permit Conditions II.A.8. or II.A.9. For purposes of Permit Conditions II.A.8. and II.A.9., the Ecology representative will be an Ecology construction inspector, project manager, or other designated representative of Ecology.

- II.A.8. The Permittees shall submit a nonconformance report (NCR) to the Ecology representative, as applicable, within five (5) calendar days of the Permittees becoming aware of incorporation of minor nonconformance from the approved designs, plans, and specifications into the construction of the DBVS Facility. Such minor nonconformance shall be defined, for the purposes of this permit condition, as nonconformance that is necessary to accommodate proper construction and the substitution of the use of equivalent or superior materials or equipment that do not substantially alter permit conditions or reduce the capacity of the facility to protect human health or the environment. Such minor nonconformance shall not be considered a modification of this Permit. If Ecology determines that the nonconformance is minor, it will verbally notify the Permittees. If Ecology determines that the nonconformance is not minor, it will notify the Permittees in writing whether prior approval is required from Ecology before work proceeds which affects the nonconforming item. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.

- II.A.9. Upon completion of the DBVS Facility construction subject to this Permit, the Permittees shall produce as-built drawings of the project which incorporate the design and construction nonconformance resulting from all change documentation, as well as changes made pursuant to Permit Condition II.A.8. The Permittees shall place the as-built drawings into the operating record within three (3) months of completing construction.

II.B. WASTE ANALYSIS

- II.B.1. The Permittees shall maintain adequate knowledge of any waste to be managed properly by the DBVS Facility before acceptance, after receipt, and during treatment and storage of these wastes. The Permittees will ensure this knowledge through compliance with the requirements of WAC 173-303-300 and with the

90% Design Modification

July 24, 2006

provisions of the Waste Analysis Plan (WAP), Permit Attachment BB, [WAC 173-303-806(4)(a)(iii) and WAC 173-303-300(1)].

- II.B.2. When laboratory analytical methods are required to confirm the Permittees' knowledge of the waste, the Permittees must ensure that the sampling and test methods listed as acceptable by WAC 173-303-110, or equivalent methods approved in writing by Ecology, are used pursuant to Permit Conditions I.F.1. and I.F.2.
- II.B.3. The Permittees are responsible for obtaining accurate information for each waste stream. Inaccurate waste analysis information provided by the generating site (or unit) is not a defense for noncompliance by the Permittees with the waste management requirements and conditions of this Permit, WAC 173-303, and in Chapter 173-303-140.
- II.B.4. Records and results of waste analyses described in this Permit shall be maintained as described in Permit Condition II.G. The DBVS Facility operating record shall include, but not be limited to, information requirements for waste analysis in Permit Condition II.G.
- II.B.5. All dangerous and/or mixed wastes shall be managed only in areas authorized for dangerous waste management under the conditions of this Permit.
- II.B.6. The Permittees shall comply with requirements for waste analysis specified in Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8., for all waste transferred from Tank 241-S-109 and for all waste at the DBVS Facility to include simulants and treated waste.
- II.B.7. COMPLIANCE SCHEDULES
- The following amendments to Permit Attachment BB are hereby made. The Permittee shall submit the revised pages reflecting these amendments to Ecology prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility. These amendments do not constitute a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.:
- II.B.7.a. Section 6.1, page 6-1, first paragraph, first sentence is revised as follows: "The Waste Analysis Plan (WAP) provides the basis for measuring the adequacy of waste treatment and assists in optimizing the waste treatment operation based on treated waste analysis results and offgas emissions."
- II.B.7.b. Section 6.1, page 6-1, second paragraph, first sentence is revised as follows: "The WAP objective is to develop a sampling approach for (1) the final vitrified waste form to ensure compliance with the waste acceptance criteria of the IDF or another permitted disposal facility, and the land disposal restrictions listed in WAC 173-303-140; (2) develop waste feed limitations that will result in the final vitrified

90% Design Modification

July 24, 2006

waste form meeting (1) above and, in addition, meet the performance standards for offgas emissions in Section 6.4 of the RD&D Permit issued by Ecology. This second objective will be addressed in the Waste Form Qualification (WFQ) plans.”

- II.B.7.c. Section 6.2, page 6-2, Table 6-1, is revised to include under Phase 1, Vitrified Waste Header “6” as a superscript and as footnote “6” as follows: “The checkmark indicates that the waste code listed for the waste feed and the vitrified waste in Phase 1 will be sampled/analyzed as specified in Table 6.1.”
- II.B.7.d. Section 6.2, page 6-2, Table 6-1, footnote “2” is revised as follows: “Analyze once per full waste receipt tank unless a reduced analysis frequency and/or scope is approved by Ecology.”
- II.B.7.e. Section 6.2, page 6-2, Table 6-1, footnote “3” is revised as follows: “Analyze once per ICV® package for the initial 10 ICV® packages; subsequent frequency as specified in an Ecology approved WFQ plan.”
- II.B.7.f. Section 6.2.4, page 6-8, second sentence, “These waste feed batches will be sampled for constituents in Table 6-1.”
- II.B.7.g. Section 6.2.4, page 6-8, sixth sentence, “The analytical methods used for measuring concentrations will follow the analytical methods listed in Appendix D of the Permit Application; Permit Attachment BB.”
- II.B.7.h. Section 6.2.5, page 6-9, second sentence, “The frequency of analysis of the waste during Phase 2 will be once per full DBVS waste receipt tank or as specified in an Ecology approved WFQ plan.”
- II.B.7.i. Section 6.2.5.1, page 6-9, first paragraph, last sentence is revised as follows: “The frequency of sampling of ICV® packages will be once for the initial ten (10) ICV® packages; subsequent frequency as specified in an Ecology approved WFQ plan.”
- II.B.7.j. Section 6.2.5, page 6-10, Table 6-7, footnote “1” is revised as follows: “All tests will be performed as specified in an Ecology approved WFQ plan.”
- II.B.7.k. Section 6.5.1.1, page 6-11, third sentence is revised as follows: “The analytical methods and the associated QA/QC are specified in Appendix D of the Permit Application, Permit Attachment BB.”
- II.B.7.l. Section 6.5.2, page 6-11, sixth sentence, “At a minimum, at least one trip blank will accompany each shipment per sample type to the laboratory.”
- II.B.7.m. Section 6, page 6-13, Figure 6-1, the block entitled “WRS” is deleted.

90% Design Modification

July 24, 2006

II.B.7.n. Section 6, page 6-13, Figure 6-1, the block entitled “Waste Feed,” the narrative under “Sampling Point” is revised as follows:

“Phase 1: Waste staging tank”

“Phase 2: Liquid waste pump skid for the DBVS Facility waste and simulant staging tanks.”

“Purpose of Feed Sampling” is amended to include the following: “Provide mass balance information”

II.B.7.o. Section 6, page 6-13, Figure 6-1, the block entitled “Offgas Treatment System” is amended to also include the following:

- RD&D Permit issued by Ecology under WAC 173-303-809 for the DBVS Facility.

II.B.7.p. Section 6, page 6-13, Figure 6-1, the block entitled “Treated Waste,” the narrative under “Sampling Point,” replace with: “ICV® Package.”

II.B.7.q. Section 6, page 6-13, Figure 6-1, the block entitled “Secondary Liquid Effluent,” the narrative under “Purpose of Waste Sampling” is amended to include “and provide mass balance information.”

II.B.7.r. Section 6, page 6-13, Figure 6-1, the block entitled “Treated Waste,” the narrative under “Sampling Frequency” is revised as follows: “Once per ICV® package for the initial ten (10) ICV® packages; subsequent frequency as specified in an Ecology approved WFQ plan.”

“Purpose of Feed Sampling” is amended to include the following: “Provide mass balance information.”

II.B.7.s. Section 6, page 6-13, Figure 6-1, the block entitled “Secondary Liquid Effluent,” the narrative under “Sampling Point” is revised as follows: “Effluent Holding Tanks.”

II.B.7.t. Section 6, page 6-13, Figure 6-1, the block entitled “Secondary Liquid Effluent,” the narrative under “Sampling Frequency” is revised as follows: “Every tanker truckload during startup (3 batches) as required by the ETF Disposal Facility for mass balance as specified in the approved WFQ Plan.”

II.B.7.u. Section 6, page 6-13, Figure 6-1, the block entitled “Secondary Liquid Effluent,” the narrative under “Analytical Methods Will Measure” is amended to include the following: “Appendix D of the Permit Application; Permit Attachment BB for mass balance information.”

90% Design Modification

July 24, 2006

- II.B.7.v. Section 6, page 6-13, Figure 6-1, the block entitled “Solid Secondary Waste,” the narrative under “Purpose of Waste Sampling” is amended to include the following: “and provide mass balance information.”
- II.B.7.w. Section 6, page 6-13, Figure 6-1, the block entitled “Solid Secondary Waste,” the narrative under “Sampling Point, Sampling Method, and Sampling Frequency” is revised as follows: “Meet the Waste Acceptance Criteria of a Disposal Facility.”
- II.B.7.x. Section 6, page 6-13, Figure 6-1, the block entitled “Solid Secondary Waste,” the narrative under “Analytical Methods Will Measure” is amended to include the following: “Appendix D of the Permit Application; Permit Attachment BB for mass balance information.”
- II.B.7.y. Section 6, page 6-13, Figure 6-1, under “Assumptions,” revise third bullet as follows: “Waste Analysis for compliance with WAC 173-303-395 will be determined pursuant to the RD&D Permit issued by Ecology.”
- II.B.7.z. Section 6.2.3.1, Table 6-3, add D004 through D011 constituents to table, HLVT LDR Treatment Standard for D004 through D011, footnote “3” to sulfates and organic carbon, and a parenthesis before the word “Land” in the title of the third column.
- II.B.8. Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility, Permittees shall submit and receive written approval from Ecology for the following revisions of Permit Attachment BB. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:
- II.B.8.a. Amend the sampling, analysis, and QA/QC procedures to address any sumps that are part of secondary containment systems for the DBVS Facility storage and treatment units.
- II.B.8.b. Amend to include, “Sampling and analysis for those others and QA/QC procedures and sampling frequency for the parameters identified in Section 6.2.3.4, 1 through 3, and in Table 6-2 for Phase 1.”
- II.B.8.c. Amend to include an Appendix specifying limitations for the ICV® packages addressing at a minimum the following:
- II.B.8.c.i. Size, durability, compressibility, stacking, handling, retrievability from storage and after final disposal, outside and inside package residual contamination, and disposal facility testing/acceptance requirements.
- II.B.8.d. Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall submit to Ecology for approval, and strictly for this RD&D Permit, documentation not based solely on process knowledge, that shows the removal of the characteristic codes D001 and D003 from S-109 tank waste.

II.B.9. Prior to the initial receipt of dangerous and/or mixed waste in the DVBS Facility, the Permittees shall submit Section 2 of Permit Attachment AA amended to include the following specified as “for information only.” These amendments do not constitute a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.:

II.B.9.a. A description of all ninety (90) day storage and satellite accumulation areas within the DBVS Facility.

II.B.9.b. A description of each waste to be located in the areas designated in “a” above.

II.B.9.c. A map clearly depicting the areas designated in “a” above.

II.C. PREPAREDNESS AND PREVENTION

II.C.1. In accordance with WAC 173-303-340, the facility shall be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned release, sudden or non-sudden, of dangerous and/or mixed waste or dangerous waste constituent to air, soil, or surface or groundwater that could threaten human health or the environment.

II.C.2. The Permittees shall ensure all water related safety equipment, such as eyewash units and emergency showers, remain operable at all times, including during periods of subfreezing temperatures.

II.C.3. The Permittees shall comply with WAC 173-303-340(4) and WAC 173-303-355(1) pertaining to arrangements with local authorities.

II.C.4. The Permittees shall comply with Permit Attachment FF (WAC 173-303-340).

II.C.5. RESERVED

II.C.6. COMPLIANCE SCHEDULES

Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall submit and receive written approval from Ecology for incorporation in Permit Attachment FF, of the following, with the exception of II.C.6.a.viii. A., which will be incorporated into the Permit Administrative Record. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:

II.C.6.a. Description of procedures, structures, or equipment used at the facility to:

II.C.6.a.i. Prevent hazards and contain spills in unloading/loading operations (e.g., ramps, berms, pavement, special forklifts);

90% Design Modification

July 24, 2006

II.C.6.a.ii. Prevent run-off from dangerous and/or mixed waste handling areas to other areas of the facility or environment, or to prevent flooding (e.g., berms, dikes, trenches);

II.C.6.a.iii. Prevent contamination of water supplies;

II.C.6.a.iv. Mitigate effects of equipment failure and power outages;

II.C.6.a.v. Prevent undue exposure of personnel to dangerous and/or mixed waste (e.g., protective clothing);

II.C.6.a.vi. Prevent releases to the atmosphere; and

II.C.6.a.vii. Test and maintain equipment to assure proper operation in the event of an emergency pursuant to WAC 173-303-340(1).

II.C.6.a.viii. A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes as required to demonstrate compliance with WAC 173-303-395, including documentation demonstrating compliance with WAC 173-303-395(1)(c), to include, at a minimum, the following:

A. USDOE "Final Hazard Analysis (FHA) for Demonstration Bulk Vitrification System (DBVS)." If the FHA is not completed prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility the Preliminary Hazard Analysis (PHA) shall be submitted and the FHA shall be submitted to replace it when it is completed.

B. Operating Procedures and/or waste feed limitations that will be followed and incorporated into Permit Attachment BB and/or Permit Attachment FF (Preparedness and Prevention) to assure flammable/toxic gases will not accumulate in any of DBVS Facility storage or treatment units/systems at hydrogen gas levels above the lower explosive limit.

C. Operating parameters to be monitored/controlled and limitations for these parameters addressing each DBVS Facility storage and treatment unit for waste compatibility, safe operation, and compatibility with unit materials of construction. Amend Permit Attachment BB to include these parameters and the monitoring frequency.

II.D. INSPECTION PLAN

II.D.1. The Permittees shall include inspections for all DBVS Facility dangerous and/or mixed waste management units specified in Permit Parts III, IV, and V to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health. Inspections must be conducted in accordance with the DBVS Facility Inspection Schedule, Permit Attachment II [WAC 173-303-320].

II.D.2. COMPLIANCE SCHEDULE

Prior to the receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall update and resubmit and receive written approval from Ecology of the Inspection Schedule in Permit Attachment II. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. The revised schedule shall include, but not be limited to, a through c below. In addition, the Permittees shall submit to Ecology for incorporation into the Administrative Record, the basis for developing Inspection Schedule frequencies.

II.D.2.a. Detailed dangerous and/or mixed waste management unit specific and general inspection schedules and description of procedures (not examples) pursuant to WAC 173-303-630(6), 173-303-640(3)(c) and (6), and 173-303-670(7)(b) in accordance with WAC 173-303-680(3). The inspection schedule shall be presented in the form of a table (not typical) that includes a description of the inspection requirement, inspection frequency, and types of problems to look for during the inspections;

II.D.2.b. Integrity assessment program and schedule for all tanks under Permit Part IV and the DBVS under Part V of this Permit shall address the conducting of periodic integrity assessments over the life of the units, in accordance with WAC 173-303-640(3)(b), and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of unit, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b)]; and

II.D.2.c. Inspection schedules for all tanks under Permit Part IV and the DBVS under Permit Part V which have leak detection system and control instrumentation to include, but is not limited to valves, pressure devices, flow devices, measuring devices, as specified in Permit Conditions IV.A.4.b. and V.A.1.n.

II.E. TRAINING

II.E.1. The Permittees shall ensure that the DBVS Facility is operated and maintained at all times by persons who are trained and qualified to perform these and any other duties that may reasonably be expected to directly affect emissions from the DBVS Facility [WAC 173-303-680(2)] and in accordance with WAC 173-303-330.

II.E.2. The Permittees shall conduct personnel training in accordance with the training program, Permit Attachment CC.

II.E.3. COMPLIANCE SCHEDULE

Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility units, the Permittees shall update and resubmit and receive approval from Ecology for the Training Program description in Permit Attachment CC. Such approval

90% Design Modification

July 24, 2006

shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.
The revised Training Program description shall include, but not be limited to:

- II.E.3.a. Detailed unit specific and general training program descriptions (not typical) consistent with WAC 173-303-806(4)(a)(xii).
- II.E.3.b. Sufficient detail to document that the training and qualification program for all categories of personnel whose activities may reasonably be expected to directly affect emissions from DBVS, except control room operators, is appropriately consistent with 40 Code of Federal Regulations (CFR) 63.1206(c)(6)(ii), and for control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(i) and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi) [WAC 173-303-680(2)] from WAC 173-303-806, as implemented in WAC 173-303-330(1).

II.F. CONTINGENCY PLAN

- II.F.1. The Permittee shall comply with the requirements of WAC 173-303-350(4) for maintaining copies of the Contingency Plan, Permit Attachment DD, at the DBVS Facility, and providing copies to the authorities listed therein.
- II.F.2. At all times, the Permittees shall have qualified persons designated as the emergency coordinator and alternate emergency coordinators.
- II.F.3. The Permittees shall immediately carry out applicable provisions of Permit Attachment DD, pursuant to WAC 173-303-360(2), whenever there is a release of dangerous and/or mixed waste or dangerous waste constituents, or other emergency circumstance, any of which threatens human health or the environment.

II.F.4. COMPLIANCE SCHEDULE

The following amendment to Permit Attachment DD, is hereby made. The Permittee shall submit the revised page reflecting this amendment to Ecology prior to the initial receipt of dangerous and/or mixed waste. This amendment does not constitute a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.:

Page C-10, Figure C-2, Tank No. "32-D74-004" is renumbered Tank No. "32-D74-016."

- II.F.5. Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall update and resubmit and receive written approval from Ecology of Permit Attachment DD to be consistent with design details and schedule described in Parts III, IV, and V and Attachments JJ, KK, and LL of this Permit. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.

90% Design Modification

July 24, 2006

- II.F.6. After initial receipt of dangerous and/or mixed waste, the Permittees shall review and amend, if necessary, the applicable portions of the Contingency Plan, Permit Attachment DD, in accordance with the provisions of WAC 173-303-350(5) and WAC 173-303-830(4). The amended Contingency Plan shall be submitted to Ecology as a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.
- II.F.7. Prior to the initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall revise, resubmit, and receive written approval from Ecology of Permit Attachment DD to include the following. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:
- II.F.7.a. Sections C.8.1, C.8.2, C.8.4, C.11.0, amended to provide the information currently designated "TBD" and/or "(to be determined)."
- II.F.7.b. Section C.3.1, page C-4, Table C-1, amended to include a current list of names, addresses, and phone numbers (office and home available through the Hanford Patrol Operation Center) of all persons qualified to act as the emergency coordinator required under WAC 173-303-360(1). Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.
- II.G. RECORDKEEPING AND REPORTING
- II.G.1. In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, including Permit Attachment GG, the Permittees shall comply with all the applicable notification, certification, and recordkeeping requirements described in WAC 173-303-380(1)(j), (k), (m), and (o).
- II.G.2. The Permittees shall maintain a written operating record at the DBVS Facility in accordance with WAC 173-303-380(1) consisting of records kept for the length of time specified below. Also, the Permittees shall record all information referenced in this Permit in the operating record within two (2) business days of the information becoming available. The operating record shall include, but is not limited to, the information listed below:
- II.G.2.a. The following records shall be maintained until final closure is complete and certification is accepted by Ecology:
- II.G.2.a.i. An up-to-date map showing the locations where dangerous and/or mixed wastes are managed within the facility;
- II.G.2.a.ii. Written reports pursuant to Permit Condition II.F., Contingency Plan, and WAC 173-303-360(2)(k) of all incidents that require implementation of the Contingency Plan, Permit Attachment DD;
- II.G.2.a.iii. Record of spills and releases;

- II.G.2.a.iv. Written reports and records of immediate notification to the Director to address releases, fires, and explosions [WAC 173-303-810(14)(f)];
- II.G.2.a.v. Summaries of all records of corrective action;
- II.G.2.a.vi. All other environmental permits;
- II.G.2.a.vii. Records and results of waste analyses required by Permit Attachment BB and WAC 173-303-380(1)(c) that include, at a minimum:
 - The date(s), exact location, and times of sampling or measurements;
 - The name(s) of the individual(s) who performed the sampling or measurements;
 - The date(s) analyses were performed demonstrating that EPA SW-846 holding times were satisfied;
 - The name of the individual(s) who performed the analyses;
 - The analytical techniques or methods used;
 - The analytical results;
 - The QA/QC results and requirements; and
 - The unique identity of the equipment or instrument used for the analysis including the type/model number and either the serial number or the inventory number; and
- II.G.2.a.viii. Training records of facility personnel.
- II.G.2.b. The following records shall be maintained for a minimum of five (5) years. This time period may be extended by the Director in the event of enforcement action or notification by the Director that an investigation is ongoing. In the case of notification of investigation/inspection, the Permittees will not be required to keep the records longer than one (1) year past the normal timeframe unless an enforcement action is issued:
 - II.G.2.b.i. Facility operation and maintenance records and reports prepared pursuant to this permit;
 - II.G.2.b.ii. Date(s) and methods(s) of treatment used for waste process operation including name(s) of personnel performing actual operation;
 - II.G.2.b.iii. Progress reports and any required notifications prepared pursuant to this Permit;

- II.G.2.b.iv. The notice and certification required of a generator under WAC 173-303-140 (Land Disposal Restrictions);
- II.G.2.b.v. Records of all inspection and monitoring information meeting requirements of WAC 173-303-320(2)(d) and this Permit including, at a minimum, the following calibration and maintenance records:
 - The date(s) and time(s) of data recording;
 - The name of the person taking and recording the information; and
 - The recorded information itself whether consisting of observation, data measurement, instrument reading, or any other monitoring method;
- II.G.2.b.vi. Records of all inspections meeting the requirements in WAC 173-303-395(1)(d);
- II.G.2.b.vii. Annual reports submitted in compliance with WAC 173-303-220(1), Generator Report-Form 4. However, if the reports are necessary to supplement the facility operating record, they must be retained until final closure is complete and certified.
- II.G.2.b.viii. Annual reports submitted in compliance with WAC 173-303-390(2), TSD Facility Report-Form 5. However, if the reports are necessary to supplement the facility operating record, they must be retained until final closure and corrective action is complete and certified;
- II.G.2.b.ix. Manifests; and
- II.G.2.b.x. Training records of former facility personnel.
- II.G.2.c. Up-to-date copies of the following documents as amended, revised, and modified shall be maintained at the facility until final closure certification is accepted by Ecology:
 - II.G.2.c.i. The Permit and all attachments;
 - II.G.2.c.ii. The Certified RD&D Permit Application dated May 10, 2004;
 - II.G.2.c.iii. Documentation of arrangements made with local authorities pursuant to WAC 173-303-340(4) and (5); and
 - II.G.2.c.iv. All closure documents prepared pursuant to this Permit [WAC 173-303-610(3)(a)].
- II.G.2.d. For all new tank systems and components, pursuant to WAC 173-303-640(3), an assessment by an independent, registered, professional engineer or by an independent, qualified, installation inspector not affiliated with the tank vendor and

90% Design Modification

July 24, 2006

certified by an independent, qualified, registered, professional engineer, that the tank system was installed properly and that all discrepancies have been repaired as required by WAC 173-303-640(3)(c).

- II.G.2.d.i. Results of periodic tightness testing and integrity assessments of all tank systems; and
- II.G.2.d.ii. For all tanks that require corrosion protection, submit a written statement from an independent corrosion expert that attests to the proper design and installation of any corrosion protection measures.
- II.G.2.e. For all DBVS Facility and DBVS components, pursuant to WAC 173-303-640(3), an assessment by an independent, qualified, registered, professional engineer or by an independent, qualified tank installation inspector not affiliated with the tank vendor and certified by an independent, registered, professional engineer, that the tank system was installed properly and that all discrepancies have been repaired as required by WAC 173-303-640(3)(c).

(For purposes of Permit Conditions II.G.2.e.i. and II.G.2.e.ii., where reference is made to WAC 173-303-640, the following substitutions apply: substituting the terms “DBVS” for “tank system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and “sub-system(s) or sub-system equipment of a DBVS” for “component(s)” in accordance with WAC 173-303-680, with the exception that these substitutions do not apply to the subsystems that are marked with an asterisk or an “a” on Permit Tables V.1. and V.4., and do not apply to ICV® Stations listed on Permit Tables V.1. and V.4.

- II.G.2.e.i. Results of periodic tightness testing and integrity assessments of all tank systems; and
- II.G.2.e.ii. For all DBVS subsystems that require corrosion protection, submit a written statement from an independent corrosion expert that attests to the proper design and installation of any corrosion protection measures.

II.H. CLOSURE

- II.H.1. The Permittees must conduct closure of the DBVS Facility and piping leading to the DBVS according to Permit Attachment EE and Condition II.H. The closure plan shall be modified according to provisions of WAC 173-303-610(3)(b)(ii).
- II.H.2. The Permittees shall submit and receive written approval from Ecology, for any update to the Closure Plan, Permit Attachment EE, prior to commencing partial closure.

90% Design Modification

July 24, 2006

- II.H.3. The Permittees shall submit and receive written approval from Ecology for a Sampling and Analysis Plan and a revised Closure Plan prior to commencing final closure.
- II.H.4. At least forty-five (45) days before initiating closure, the Permittees must provide Notification of Closure pursuant to WAC 173-303-610(3)(c).
- II.H.5. Ecology may require additional sampling and/or inspection after the Permittees implement the approved Sampling and Analysis Plan if Ecology determines that the sampling and analyses have not adequately demonstrated whether clean closure has been achieved. Such a requirement will be implemented pursuant to WAC 173-303-830(3). Additional sampling and analysis may be required for the following reasons:
- II.H.5.a. Specialized sample collection or analytical techniques are required to ensure adequate quantization limits for chemical constituents; or
- II.H.5.b. Results indicate the need to analyze for additional constituents at certain locations; or
- II.H.5.c. Results indicate additional soil sampling is required in certain locations; or
- II.H.5.d. Other reasons indicate the Sampling and Analysis Plan has not adequately demonstrated whether clean closure has been achieved.
- II.H.6. Documentation supporting the independent, qualified, registered professional engineer's certification of closure must be submitted to Ecology with the closure certification required by WAC 173-303-610(6). The Permittees are required to furnish documentation supporting the independent registered professional engineer's certification to Ecology upon request, until Ecology has notified the Permittees in writing that Ecology agrees with and has accepted the Permittees' closure certification. The closure documentation must include, at a minimum, the following:
- II.H.6.a. Sampling procedures that were followed;
- II.H.6.b. Soil and concrete locations that were sampled;
- II.H.6.c. Sample labeling and handling procedures that were followed, including chain of custody procedures;
- II.H.6.d. Description of procedures that were followed to decontaminate concrete or metal to meet the clean closure standards as set by Ecology, on a case by case basis, in accordance with the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous

90% Design Modification

July 24, 2006

waste constituents, or to achieve a “clean debris surface” as specified in WAC 173-303-140 [WAC 173-303-610(2)(b)(ii)].

- II.H.6.e. Laboratory and field data, including supporting QA/QC results and requirements;
- II.H.6.f. Report that summarizes closure activities;
- II.H.6.g. Copy of all field notes taken by the independent, qualified, registered professional engineer; and
- II.H.6.h. Copy of all contamination survey results.
- II.H.7. In addition to other requirements in Permit Attachment EE, the Permittees shall sample and analyze soils at the following locations:
 - II.H.7.a. Where dangerous wastes constituents migrated outside of secondary containment systems as a result of leaks, spills, or other releases of dangerous waste; and
 - II.H.7.b. Where cracks or gaps developed in the concrete of secondary containment systems at any time during the operation of the facility and leaks, spills, or other releases of dangerous waste may have occurred to such cracks or gaps.
- II.H.8. If the value from a soil sample analysis is above the clean closure level for any constituent and represents contamination from the DBVS Facility, then the area represented by the sample (subunit or unit) will be considered to be above the standard for clean closure and the Permittees shall propose additional actions. Ecology will determine whether the additional actions proposed are adequate considering circumstances at the facility. If Ecology determines the actions proposed by the Permittees are not adequate, then Ecology will specify additional actions to be taken. Examples of additional actions may include, but are not limited to, the following:
 - II.H.8.a. Removing or remediating soil that has contamination above the cleanup levels followed by conformational sampling to ensure clean closure standards are met;
 - II.H.8.b. Reanalyzing soils of the entire subunit or unit represented by the sample that has contamination above the cleanup levels using other samples taken within the subunit or unit and approved statistical methods. Approved statistical methods include, but are not limited to, calculating the upper 95 percent confidence interval about the mean for sample data. If this parameter value for the constituent in question is lower than the Ecology approved numeric cleanup level for clean closure in accordance with WAC 173-303-610(2)(b)(i), then the subunit or unit will be considered to meet the clean closure standards for that constituent. Samples included in this statistical analysis must be randomly selected and the distribution of their concentrations must fit a lognormal or normal distribution;

90% Design Modification

July 24, 2006

- II.H.8.c. Establishing post closure care for the areas not able to attain clean closure standards;
- II.H.8.d. Sample labeling and handling including chain of custody procedures;
- II.H.8.e. Decontamination procedures of secondary containment systems; and
- II.H.8.f. Ecology may require modification of the closure plan if significant releases occur at the facility prior to the time of closure.

II.H.9. COMPLIANCE SCHEDULE

Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall update and resubmit and receive written approval from Ecology for the Closure Plan, Permit Attachment EE, to be consistent with design details and schedule described in Permit Attachments JJ, KK, and LL. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. The updated Closure Plan, Permit Attachment EE, must be consistent with the closure performance standards specified in WAC 173-303-610(2).

- II.H.10. The following amendment to Permit Attachment EE is hereby made. The Permittee shall submit the revised page reflecting this amendment to Ecology prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility. This amendment does not constitute a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.

Section 11.3, page 11-1, second sentence, is revised as follows: "Closure will require the removal and disposal of all dangerous and/or mixed waste present, removal of contaminated process equipment and contaminated structural components, and removal of all soil contaminated by the DBVS Facility in accordance with WAC 173-303-610(2)(a)."

II.I. EQUIVALENT MATERIALS

If certain equipment, materials, and administrative information (such as names, phone numbers, and addresses) are specified in the Permit, the Permittees may use equivalent or superior substitutes. Use of such equivalent or superior items within the limits (e.g., ranges, tolerances, and alternatives) already clearly specified in sufficient detail in this Permit is not considered a modification of this Permit. However, the Permittees must place documentation of the substitution, accompanied by a narrative explanation and the date the substitution became effective, in the operating record within seven (7) days of putting the substitution into effect, and submit documentation of the substitution to Ecology.

90% Design Modification

July 24, 2006

Note: The format of tables and forms contained in Permit Attachment FF are not subject to the requirements of this Permit, and may be revised at the Permittees' discretion.

If Ecology determines that a substitution was not equivalent to the original, they will notify the Permittees that the Permittees' claim of equivalency has been denied, of the reasons for the denial, and that the original material or equipment must be used.

II.J. CLEANUP OF RELEASED MATERIAL

II.J.1. The Permittees shall comply with the requirements of WAC 173-303-145, including but not limited to, notification, mitigation, and control measures specified in WAC 173-303-145(2) and (3) under the following circumstances:

II.J.1.a. A spill or non-permitted discharge of dangerous and/or mixed waste or hazardous substance that is intentionally or accidentally spilled or discharged into the environment (unless otherwise permitted) such that human health or the environment is threatened, regardless of the quantity of dangerous and/or mixed waste or hazardous substance. For spills or discharges onto the ground, into the groundwater, or into the surface water notify all local authorities in accordance with the local emergency plan.

II.J.1.b. A spill or non-permitted discharge of dangerous or mixed waste or hazardous substance results in emission into the air such that human health or the environment is threatened.

II.J.1.c. Other spills or discharges occur which threaten human health or the environment.

II.J.2. Consistent with good management for abatement of initiating cause and prudent consideration of health and safety risks to personnel, the Permittees shall remove spilled or leaked waste within secondary containment within twenty-four (24) hours, or in as timely a manner as is possible, to prevent harm to human health and the environment.

II.K. FINANCIAL ASSURANCE AND LIABILITY REQUIREMENTS

II.K.1. The Permittees are subject to the cost estimate requirements for facility closure in accordance with WAC 173-303-620(3) and the cost estimate requirements for post-closure monitoring and maintenance as in WAC 173-303-620(5). The Permittees are exempt from the liability requirements in WAC 173-303-620(8) and the financial assurance requirements in WAC 173-303-620(4).

II.L. LAND DISPOSAL RESTRICTIONS

II.L.1. The Permittees must meet LDR standards for disposal of final waste forms for waste codes on the SST Part A Permit Application Form 3 as listed in Permit Attachment BB, Table 6-1. All waste forms subject to LDR standards must be demonstrated to meet all applicable treatment standards and requirements (WAC 173-303-140/40 CFR Part 268). Waste that has dangerous and/or mixed waste constituents shall be analyzed in accordance with this Permit and WAC 173-303-140/40 CFR 268. Waste that has dangerous/hazardous constituents shall be analyzed in accordance with this Permit and WAC 173-303-140/40 CFR 268. For waste that has treatment standards that are not concentration based, the generator and/or treatment facility must demonstrate that the waste meets the applicable treatment standards using process knowledge and/or by waste analysis, as required by this Permit.

II.M. AIR EMISSIONS

II.M.1. Prior to installing or using any equipment subject to the requirements of WAC 173-303-690, the Permittees shall obtain a permit modification following the Permit Conditions I.C.2. and I.C.3. process to incorporate WAC 173-303-690 standards into the Permit Application and this Permit prior to generation/receipt of dangerous and/or mixed waste in the DBVS Facility.

II.M.2. Prior to installing or using any equipment subject to the requirements of WAC 173-303-691, the Permittees shall obtain a permit modification following the Permit Condition I.C.2. and I.C.3. process to incorporate WAC 173-303-691 standards into the Permit Application and this Permit prior to generation/receipt of dangerous and/or mixed waste in the DBVS Facility.

This page intentionally left blank.

PART III – CONTAINERS

For purposes of Permit Part III, all references to Permit Attachment JJ shall be read as references to Permit Attachment JJ, as revised pursuant to Permit Condition III.G.

III.A. CONTAINER MANAGEMENT AREAS AND ACCUMULATION LIMITS

- III.A.1. The Permittees shall place or store dangerous and/or mixed waste ICV® Packages in the areas identified in Figure 2-2 of Permit Attachment JJ and Permit Table III.1.
- III.A.2. Any dangerous and/or mixed waste generated and managed in containers by the facility shall be managed in accordance with the generator requirements in WAC 173-303-200.
- III.A.3. For the purpose of determining compliance with storage capacity limits, every ICV® Package shall be considered to be full.
- III.A.4. The Permittees may store dangerous and/or mixed waste ICV® Packages with the waste codes listed in Table 6-1, excluding characteristic code D001 and D003 of Permit Attachment BB, in accordance with Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8. Total containerized dangerous and/or mixed waste storage at the DBVS Facility shall not exceed capacity specified on Permit Table III.1.
- III.A.5. The Permittees may place and store dangerous and/or mixed waste only in approved container storage areas listed in Permit Table III.1. The Permittees shall limit the total volume of waste to quantities specified for the individual container storage areas listed in Permit Table III.1.
- III.A.6. The Permittees are not authorized to store free liquids in any of the approved container storage areas listed in Permit Table III.1.
- III.A.7. The Permittees shall maintain documentation in the operating record for each container storage area listed in Permit Table III.1. in accordance with WAC 173-303-380 and 173-303-210.

III.B. CONTAINER STORAGE AREAS DESIGN AND CONSTRUCTION

- III.B.1. The Permittees shall construct container storage areas identified in Permit Table III.1., as specified in all applicable drawings and specifications in Permit Attachment JJ and Permit Part III.
- III.B.2. All container storage areas identified in Permit Table III.1. must be constructed in accordance with WAC 173-303-630(7)(c).

90% Design Modification

July 24, 2006

III.C. CONTAINER MANAGEMENT PRACTICES

- III.C.1. No dangerous and/or mixed waste shall be managed in the container storage areas unless the operating conditions specified under Permit Condition III.C. are complied with.
- III.C.2. The Permittees shall manage all containerized dangerous and/or mixed waste for container storage areas identified in Permit Table III.1. in accordance with procedures described in Permit Attachment JJ and the following conditions:
 - III.C.2.i. The operating records and waste tracking procedures shall indicate all times at which containerized dangerous and/or mixed waste were placed, removed from, and returned to designated storage areas as approved pursuant to Permit Conditions III.F. and II.G., Recordkeeping [WAC 173-303-380];
 - III.C.2.ii. The physical arrangement (i.e., spacing) of dangerous and/or mixed waste containers shall be in compliance with WAC 173-303-630(5)(c) as specified in Figure 2-2 of Permit Attachment JJ;
 - III.C.2.iii. All container storage areas must be operated in accordance with WAC 173-303-630;
 - III.C.2.iv. The Permittee shall not place and store ignitable and/or reactive dangerous and/or mixed waste in the container storage areas specified in Permit Table III.1. [WAC 173-303-630 (8)];
 - III.C.2.v. At all times, the Permittees shall not place and store incompatible dangerous and/or mixed waste, or dangerous and/or mixed waste and materials, in the container storage areas specified in Permit Table III.1. [WAC 173-303-630 (9)(a)];
 - III.C.2.vi. At all times, containers holding dangerous and/or mixed waste in container storage areas must be closed, except when it is necessary to add or remove waste [WAC 173-303-630(5)(a)];
 - III.C.2.vii. At all times, containers holding dangerous and/or mixed waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak [WAC 173-303-630(5)(b)];
 - III.C.2.viii. If a container holding dangerous and/or mixed waste is not in good condition (e.g., exhibits severe rusting, apparent structural defects, or any other condition that could lead to container rupture or leakage) or is leaking, the Permittees shall manage the container in accordance with procedures described in Permit Attachment JJ [WAC 173-303-630(2)];
 - III.C.2.ix. The Permittees shall ensure that all containers used for dangerous and/or mixed waste management are made of or lined with materials which will not react with,

90% Design Modification

July 24, 2006

and are otherwise compatible with, the waste to be stored [WAC 173-303-630(4)];
and

III.C.2.x. The Permittees shall not place incompatible dangerous and/or mixed wastes, or incompatible dangerous and/or mixed wastes and materials, in the same container unless WAC 173-303-395(1)(b) is complied with [WAC 173-303-630(9)(a)].

III.D. IDENTIFICATION OF CONTAINERS AND CONTAINER STORAGE AREAS

III.D.1. Pursuant to WAC 173-303-630(3), the Permittees shall ensure that all dangerous and/or mixed waste containers are labeled in a manner that adequately identifies the major risk(s) associated with the contents.

III.D.2. For all dangerous and/or mixed waste containers, the Permittees shall ensure that:

III.D.2.i. Labels are not obscured or otherwise unreadable;

III.D.2.ii. Waste containers are oriented so as to allow inspection of the labels identified in Permit Conditions III.D.1. and III.D.2., the container tracking number, and, to the extent possible, any labels which the generator placed upon the container; and

III.D.2.iii. Empty dangerous and/or mixed waste containers, as defined by WAC 173-303-160(2), must have their dangerous and/or mixed waste labels destroyed, or otherwise removed, immediately upon being rendered empty.

III.D.3. The Permittees shall post entrances and access points to container storage areas specified in Permit Table III.1. with signs that meet the requirements of WAC 173-303-310(2)(a).

III.E. INSPECTIONS AND RECORDKEEPING

III.E.1. The Permittees shall ensure all containment areas are inspected and maintained such that they are free of cracks, gaps, and are impervious to leaks, spills, and accumulation of rainfall until the collected material is removed. The Permittees shall inspect the container storage areas in accordance with the Inspection Schedules in Permit Attachment II, as revised pursuant to Permit Condition II.D.2.

III.E.2. For the container storage areas, the Permittees shall record and maintain in the DBVS Facility operating record, all monitoring, recording, maintenance, calibration, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Condition II.G.

III.F. CLOSURE

III.F.1. The Permittees shall close the DBVS Facility container storage areas in accordance with Permit Condition II.H. as revised pursuant to Permit Condition II.H.9.

III.G. COMPLIANCE SCHEDULES

- III.G.1. All information identified for submittal to Ecology in Permit Conditions III.G.2. through III.G.4. of this compliance schedule must be signed and certified in accordance with the requirements in WAC 173-303-810(12) and (13).
- III.G.2. Prior to construction of the DBVS Facility container storage area, as identified in Permit Table III.1., the Permittees shall submit and receive written approval from Ecology for engineering information as specified below, for incorporation into Permit Attachment JJ. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:
- III.G.2.a. Design drawings (General Arrangement Drawings - in plan and cross sections) and specifications including references to specific codes and standards (e.g., UBC, ASCE, etc.) for each container storage areas' foundation. These items should show basic design parameters and dimensions, and location of the container storage areas, to keep containers from contact with standing liquids (i.e., elevated or are otherwise protected).
- III.G.3. Prior to initial receipt of dangerous and/or mixed waste to the DBVS Facility, the Permittees shall submit and receive written approval from Ecology for Permit Table III.1., updated to include the contents of Column 3 "Engineering Description" to reflect the engineering information provided under III.G.2.a. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.
- III.G.4. Prior to initial receipt of dangerous and/or mixed waste to the DBVS Facility, the Permittees shall update and submit and receive written approval from Ecology for the following, as specified below, for incorporation into Permit Attachment JJ. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:
- III.G.4.a. Narrative Descriptions, updated;
- III.G.4.b. Descriptions of procedures for precluding release of contents of ICV® Package to the environment during the ICV® Package disconnect and sampling the ICV® Package including, but not limited, to the following:
- III.G.4.b.i. Sealing the sampling port;
- III.G.4.b.ii. Coring process;
- III.G.4.b.iii. External decontamination; and
- III.G.4.b.iv. ICV® Package disconnect procedures;

90% Design Modification

July 24, 2006

- III.G.4.c. Descriptions of procedures for handling and transport of containers within the DVBS Facility;
- III.G.4.d. Description of the tracking system used to track containers throughout the DBVS Facility pursuant to WAC 173-303-380. The tracking system, at a minimum, will do the following:
- III.G.4.d.i. Track the location of containers within the DBVS Facility;
 - III.G.4.d.ii. Track which containers have been shipped off-facility and/or off-site, and to where they have been shipped, as appropriate;
 - III.G.4.d.iii. For containers intended for transport off-site, include information in accordance with the requirements specified in WAC 173-303-190(3)(b);
 - III.G.4.d.iv. Record the date container is placed in the container storage area;
 - III.G.4.d.v. Record the nature of the waste in any given container, including dangerous waste designation codes, any associated Land Disposal Restriction treatment requirements, and the major risk(s) associated with the waste as described in Permit Condition III.D.;
- III.G.4.e. The Description(s) of procedures for container spacing, stacking, and labeling pursuant to WAC 173-303-630(3), WAC 173-303-630(5)(c), and WAC 173-303-340(3);
- III.G.4.f. The Description(s) of procedures for inspecting the container storage areas [WAC 173-303-320 and WAC 173-303-630(6)]; and
- III.G.4.g. The Description(s) of procedures for responding to damaged (e.g., severe rusting, apparent structural defects) or leaking containers [WAC 173-303-630(2)].

This page intentionally left blank.

TABLE III.1.
DESCRIPTION OF DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS)
FACILITY CONTAINER STORAGE AREAS

Dangerous Waste and Mixed Waste Container Storage Areas	Maximum Capacity Solids	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables & Figures
ICV® Package Storage Area	2,718 m ³ (96,000 ft ³)	Permit Attachment JJ, Appendix 1, Section 3, Drawing #H-14-106790, Section 5, Specification 145579-G-SP-001	Sections 2.3.2, 2.4, 4.2.9, 4.2.1.0, 4.2.11, 7.2.4, and 7.4 Figures 2-2, B-1, B-4, and 7-1
ICV® Package Sampling Area	54.4 m ³ (1,920 ft ³)	Permit Attachment JJ, Appendix 1, Section 3, Drawing #H-14-106790, Section 5, Specification 145579-G-SP-001	Sections 2.4, 7.2.4, and 7.4. Figures 2-2, B-1, B-4, and 7-1
ICV® Package Preparation	54.4 m ³ (1,920 ft ³)	Permit Attachment JJ, Appendix 1, Section 3, Drawing #H-14-106797, Section 5, Specification 145579-G-SP-001	Sections 2.4, 7.2.4, and 7.4. Figures 2-2, B-1, B-4, and 7-1
ICV® Package Cooling Area	54.4 m ³ (1,920 ft ³)	Permit Attachment JJ, Appendix 1, Section 3, Drawing #H-14-106790, Section 5, Specification 145579-G-SP-001	Sections 2.4, 7.2.4, and 7.4. Figures 2-2, B-1, B-4, and 7-1

This page intentionally left blank.

PART IV – TANKS

IV.A. **TANK SYSTEMS**

For purposes of Permit Part IV, all references to Permit Attachment KK shall be read as references to Permit Attachment KK, as revised pursuant to Permit Condition IV.A.8.

IV.A.1. Approved Waste and Storage Limits

IV.A.1.a. The Permittees may store in tank systems all dangerous and/or mixed waste with the waste codes listed in Table 6-1 and described in Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8. (mixed waste retrieved from Tank 241-S-109 and Simulant Dangerous Waste) and as specified in Permit Conditions II.A.1. and II.A.2. excluding characteristic codes D001 and D003.

IV.A.1.b. The Permittees may store and manage dangerous and/or mixed waste only in approved tank systems listed in Permit Table IV.1. and as specified in Permit Attachment KK. The Permittees shall limit the total volume of waste to quantities specified for the individual units listed in Permit Table IV.1.

IV.A.1.c. The Permittees shall manage dangerous and/or mixed waste in any DBVS Facility tank system specified in Permit Attachment KK and Permit Table IV.1., with the waste codes listed in Table 6-1 of Permit Attachment BB, in accordance with Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8., excluding characteristic codes D001 and D003.

IV.A.1.d. The Permittees shall ensure all certifications required by independent specialists (e.g., IQRPE, independent corrosion expert, independent qualified installation inspector, etc.) use the certification statement listed in WAC 173-303-810(13).

IV.A.1.e. In all future permit submittals, the Permittees shall include tank names with the tank designation (e.g., Tri-Mer Effluent tanks located in the offgas treatment system are designated 37-D74-013).

IV.A.2. Tank System Design and Construction

IV.A.2.a. The Permittees shall construct the DBVS Facility tank systems, as listed in Permit Table IV.1., in accordance with Permit Attachment KK and Permit Part IV.

IV.A.3. Tank System Installation and Certification for Aboveground Tank Systems

IV.A.3.a. The use of new aboveground tanks will require certification by an IQRPE that the tank(s) system has sufficient structural integrity and is acceptable for the storing and treatment of dangerous and/or mixed waste in accordance with WAC 173-303-640(3)(a).

- IV.A.3.b. Used aboveground tanks must be certified sound by an IQRPE in accordance with WAC 173-303-640(2)(c).
- IV.A.3.c. The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the DBVS Facility tank system during installation. An independent, qualified installation inspector or an IQRPE, trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, other structural damage, or inadequate construction/installations.
- All discrepancies must be remedied before the DBVS Facility tank system is enclosed or placed into use [WAC 173-303-640(3)(c)].
- IV.A.3.d. The Permittees must test for tightness all new tanks and ancillary equipment prior to these components being placed into use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being enclosed or placed into use [WAC 173-303-640(3)(e)].
- IV.A.3.e. The Permittees must ensure ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f)].
- IV.A.3.f. Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility, the Permittees shall obtain, and keep on file in the operating record, written statements by those persons required to certify the design of the DBVS Facility tank system and supervise the installation of the tank system in accordance with the requirements of WAC 173-303-640(3)(c), (e), and (f), attesting that each DBVS Facility tank system and corresponding containment system listed in Permit Table IV.2. and Permit Attachment KK was properly designed and installed, and that repairs pursuant to WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(h)].
- IV.A.3.g. The independent tank system installation inspection and subsequent written statements shall be certified pursuant to IV.A.1.d., comply with all requirements of WAC 173-303-640(3)(h), and shall consider, but not be limited to, the following tank system installation documentation:
- IV.A.3.g.i. Field installation report with date of installation;
- IV.A.3.g.ii. Approved welding procedures;
- IV.A.3.g.iii. Welder qualifications and certifications;

90% Design Modification

July 24, 2006

- IV.A.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
- IV.A.3.g.v. Tester credentials;
- IV.A.3.g.vi. Field inspector credentials;
- IV.A.3.g.vii. Field inspector reports;
- IV.A.3.g.viii. Field waiver reports; and
- IV.A.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair reports.
- IV.A.3.h. The Permittees shall ensure periodic integrity assessments are conducted on the DBVS Facility tank systems listed in Permit Table IV.1. over the term of this Permit as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program Permit Attachment II, as revised pursuant to Permit Condition II.D.2.
- IV.A.3.i. The Permittees shall address problems detected during the DBVS Facility tank system integrity assessments specified in Permit Condition IV.A.3.h., following the integrity assessment program in Permit Attachment II, as revised pursuant to Permit Condition II.D.2.
- IV.A.3.j. The Permittees must immediately and safely remove from service any DBVS Facility tank system or secondary containment system which through an integrity assessment is found to be “unfit for use” as defined in WAC 173-303-040, following Permit Condition IV.A.4.h.v. The affected tank system or secondary containment system must be either repaired or closed in accordance with Permit Condition IV.A.4.h.v. [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8)].
- IV.A.3.k. The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Permit Attachments BB, as revised pursuant to Permit Conditions II.B.7. and II.B.8., and Permit Attachments FF and KK, as revised pursuant to Permit Condition IV.A.8., or other corrosion protection, if Ecology believes other corrosion protection is necessary to ensure the integrity of the tank system during its use. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g)].
- IV.A.4. TANK MANAGEMENT PRACTICES

90% Design Modification

July 24, 2006

- IV.A.4.a. No dangerous and/or mixed waste shall be managed in the DBVS Facility tank systems unless the operating conditions specified under Permit Condition IV.A.4. and Permit Attachment KK are complied with.
- IV.A.4.b. The Permittees shall install and test all process and leak detection system monitoring/instrumentation as specified in Permit Table IV.3. and Permit Attachment KK.
- IV.A.4.c. The Permittees shall not place mixed waste, treatment reagents, or other materials in the DBVS Facility tank systems if these substances could cause the DBVS Facility tank systems to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a)].
- IV.A.4.d. The Permittees shall operate the DBVS Facility tank systems to prevent spills and overflows using the description of controls and practices as required in WAC 173-303-640(5)(b).
- IV.A.4.e. The Permittees shall mark all these tank systems holding dangerous and/or mixed waste with labels, or signs, to identify the waste contained in the tank. The labels, or signs, must be legible at a distance of at least fifty (50) feet and must bear a legend that identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the tank system(s) [WAC 173-303-640(5)(d)].
- IV.A.4.f. The Permittees shall ensure that the secondary containment systems for the DBVS Facility tank systems listed in Permit Table IV.1. and Permit Attachment KK are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or surface water at any time that waste is in the tank system. Any indication that a crack or gap may exist in the containment systems shall be investigated and repaired [WAC 173-303-320, WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-640(6)].
- IV.A.4.g. An impermeable interior coating or lining shall be maintained for all concrete containment systems and concrete portion of containment systems. Concrete containment systems that have construction joints must meet the requirements of WAC 173-303-640(4)(e)(ii)(C). The coating shall prevent migration of any dangerous and/or mixed waste into the concrete. All coatings shall meet the following performance standards:
- IV.A.4.g.i. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;
- IV.A.4.g.ii. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or

90% Design Modification

July 24, 2006

physical damage to the coating or lining can be identified and remedied before dangerous and/or mixed waste could migrate from the system; and

- I.V.A.4.g.iii. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D)].
- IV.A.4.h. The Permittees shall inspect all secondary containment systems for the DBVS Facility tank systems in accordance with the Inspection Schedule specified in Permit Attachment II, as revised pursuant to Permit Condition II.D.2., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-320, WAC 173-303-640(5)(c), and WAC 173-303-640(6)]:
 - IV.A.4.h.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the DBVS Facility tank system or secondary containment system, in accordance with procedures based on all applicable safety analysis documentation [WAC 173-303-640(7)(a)];
 - IV.A.4.h.ii. Determine the source of the dangerous and/or mixed waste;
 - IV.A.4.h.iii. Remove the waste from the secondary containment area pursuant to WAC 173-303-640(7)(b). The waste removed from the containment areas of the DBVS Facility tank system shall be managed as dangerous and/or mixed waste;
 - IV.A.4.h.iv. If the cause of the release was a spill that has not damaged the integrity of the DBVS Facility tank system, the Permittees may return the tank system to service pursuant to WAC 173-303-640(7)(e)(ii). In such a case, the Permittees shall take action to ensure the incident that caused liquid to enter the containment systems of these tank systems will not reoccur [WAC 173-303-320(3)];
 - IV.A.4.h.v. If the source of the dangerous and/or mixed waste is determined to be a leak from a DBVS Facility primary tank system or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees must comply with the requirements of WAC 173-303-640(7) and close the DBVS Facility tank system according to procedures in WAC 173-303-640(7)(e)(i) through (iv) or repair and re-certify the DBVS Facility tank system in accordance with WAC 173-303-810(13)(a) before the tank system is placed back into service [WAC 173-303-640(7)(e) and (f)];
 - IV.A.4.h.vi. The Permittees shall document in the operating record actions/procedures taken to comply with i. through v. above in accordance with WAC 173-303-640(6)(d); and
 - IV.A.4.h.vii. The Permittees shall notify and report releases to the environment to Ecology in accordance with WAC 173-303-640(7)(d).

90% Design Modification

July 24, 2006

IV.A.4.i. If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water liquids from damaged or broken pipes) cannot be removed from the DBVS Facility tank systems secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification shall provide the information in i., ii., and iii. listed below. The Permittees shall provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c) and WAC 173-303-640(7)(b)(ii)]:

IV.A.4.i.i. The reasons for delayed removal;

IV.A.4.i.ii. The measures implemented to ensure continued protection of human health and the environment; and

IV.A.4.i.iii. The current actions being taken to remove liquids from secondary containment.

IV.A.5. Inspections [WAC 173-303-640(6)]

IV.A.5.a. The Permittees shall inspect the DBVS Facility tank systems in accordance with the Inspection Schedules in Permit Attachment II, as revised pursuant to Permit Condition II.D.2.

IV.A.5.b. The inspection data for the DBVS Facility tank systems shall be recorded, and the records shall be placed in the DBVS Facility tank systems operating record, as specified in accordance with Permit Condition II.G.

IV.A.6. Recordkeeping [WAC 173-303-380]

For the DBVS Facility tank systems, the Permittees shall record and maintain in the operating record, all monitoring, calibration, recording, maintenance, test data, and inspection data compiled under the conditions of this Permit in accordance with Permit Attachment KK, Permit Table IV.3., and Permit Conditions II.G. and II.C.

IV.A.7. CLOSURE

The Permittees shall close the DBVS Facility tank systems in accordance with Permit Condition II.H., as revised pursuant to Permit Condition II.H.9.

IV.A.8. COMPLIANCE SCHEDULE

IV.A.8.a. All information identified for submittal to Ecology in IV.A.8.b. through IV.A.8.e. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12) and (13).

IV.A.8.b. Prior to construction of each DBVS Facility tank system, excluding ancillary equipment addressed in Permit Condition IV.A.8.c., as identified in Permit Table

90% Design Modification

July 24, 2006

IV.1., the Permittees shall submit and receive approval from Ecology for the engineering information, as specified below, for incorporation into Permit Attachment KK. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. At a minimum, engineering information specified below will show the following as required pursuant to WAC-173-303-640 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

- IV.A.8.b.i. IQRPE Reports for each DBVS Facility tank system, excluding ancillary equipment addressed in Permit Condition IV.A.8.c., shall include review of design drawings, calculations, and other information on which the certification report is based and shall include as applicable, but not limited to, review of such information described below. IQRPE Reports shall be consistent with the information separately provided in ii. through viii. below [WAC-173-303-640(3)(a)];
- IV.A.8.b.ii. Design Drawings, including references to codes and standards (general arrangement drawings in plan and cross section), updated Appendix B of Permit Attachment KK process flow diagrams, specifications, piping and instrument diagrams (including pressure control systems, instrumentation/control loops and liner installation details), and leak detection methodology. These items should show the dimensions, volume calculations, and location of the secondary containment system and should include items such as floor/pipe slopes to sumps, tanks, floor drains, location, and physical attributes of each tank [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a)];
- IV.A.8.b.iii. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];
- IV.A.8.b.iv. Detailed description of how the secondary containment for each DBVS Facility tank system will be installed in compliance with WAC 173-303-640(3)(c);
- IV.A.8.b.v. Tank, secondary containment/foundation, and leak detection system materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials as applicable) (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a) and WAC 173-303-806(4)(c)(i)];
- IV.A.8.b.vi. Tank vendor information (including, but not limited to, required performance warranties, as available) consistent with information submitted under ii. above [WAC 173-303-640(3)(a)];
- IV.A.8.b.vii. Detailed description of how the tanks will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e); and

90% Design Modification

July 24, 2006

- IV.A.8.b.viii. Tanks designed to prevent the escape of vapors, fumes, and emissions of acutely or chronically toxic (upon inhalation) extremely hazardous waste (EHW), and to prevent the buildup of explosive gases/vapors [WAC 173-303-640(5)(e)].
- IV.A.8.c. Prior to installation of ancillary equipment that is used to distribute, meter, or control the flow of dangerous and/or mixed waste from its point of generation to a storage or treatment tank(s); between dangerous and/or mixed waste storage and treatment tanks to a point of disposal on-site; or to a point of shipment for disposal off-site for each DBVS Facility tank system, as identified in Permit Table IV.1., the Permittees shall submit and receive approval from Ecology for the engineering information as specified below, for incorporation into Permit Attachment KK (the information specified below will include dimensioned engineering drawings). Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:
- IV.A.8.c.i. IQRPE Reports verifying that the ancillary equipment has sufficient structural integrity and is acceptable for the storing and treating of dangerous waste and/or mixed waste, shall include a review of design drawings, calculations, and other information as applicable, on which the certification report is based and shall include as applicable, but not be limited to, review of such information described below. The IQRPE Reports shall be consistent with the information provided separately in ii. through v. below, and the IQRPE Reports specified in Permit Condition IV.A.8.b. [WAC 173-303-640(3)(a)];
- IV.A.8.c.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], etc.), updated Appendix B of Permit Attachment KK, projected performance standards, and other information specific to ancillary equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-303-640(3)(a)];
- IV.A.8.c.iii. Design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the ancillary equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f)];
- IV.A.8.c.iv. A detailed description of how the ancillary equipment will be installed and tested in compliance with WAC 173-303-640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c); and
- IV.A.8.c.v. Ancillary equipment designed to prevent the escape of vapors, fumes, and emissions of acutely or chronically toxic (upon inhalation) EHW, and to prevent the buildup of explosive gases/vapors [WAC 173-303-640(5)(e)].
- IV.A.8.d. Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility tank systems, the Permittees shall submit and receive Ecology approval of the following, as specified below, for incorporation into Permit Attachment KK. All information

90% Design Modification

July 24, 2006

provided under this permit condition must be consistent with information provided pursuant to Permit Conditions IV.A.8.b. and c. as approved by Ecology. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.

- IV.A.8.d.i. Integrity assessment program and schedule for all DBVS Facility tank systems shall address the conducting of periodic integrity assessments on all DBVS Facility tank systems over the life of the tank, in accordance with Permit Conditions IV.A.3.i., IV.A.3.j., IV.A.3.k., and Permit Attachment II, as revised pursuant to Permit Condition II.D.2. and WAC 173-303-640(3)(b), and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the tank system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b)];
- IV.A.8.d.ii. Detailed plans and descriptions demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste, or accumulated liquid in the secondary containment system within twenty-four (24) hours [WAC 173-303-640(7)(b)(i)]. Leak detection for HIHTL shall detect, within 24-hours, a leak rate as specified by the Permittees' *Temporary Waste Transfer Line Management Program, RPP-12711*. Provide a table summarizing line length, total holdup volume until detection, total time until detection occurs, and minimum detectable leak rate.
- IV.A.8.d.iii. Detailed operational plans and descriptions demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(c)(vii)];
- IV.A.8.d.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from the DBVS Facility tanks or containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii) and WAC 173-303-806(4)(viii);
- IV.A.8.d.v. Description of procedures for investigation and repair of the DBVS Facility tank systems [WAC 173-303-320, WAC 173-303-640(6), WAC 173-303-640(7)(e) and (f), WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(viii)];
- IV.A.8.d.vi. The Permittees will provide a description of procedures for management of dangerous and/or mixed waste as specified in WAC 173-303-640(9) and (10) with the waste codes listed in Table 6-1, excluding D002 of Permit Attachment BB, in accordance with Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8.; and
- IV.A.8.d.vii. A description of the tracking system used to track dangerous and/or mixed waste throughout the DBVS Facility tank system, pursuant to WAC 173-303-380.

- IV.A.8.e. Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility tank systems, the Permittees shall submit and receive Ecology approval of the following, as specified below, for incorporation into this Permit. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions IV.A.8.b. through d.
- IV.A.8.e.i. Permit Table IV.1. amended as follows:
- A. Under column 1, update and complete list of dangerous and/or mixed waste DBVS Facility tank systems.
 - B. Under column 2, update and complete system designations.
 - C. Under column 3, replace the 'Reserved' with the appropriate references (e.g., drawing numbers, etc.) to the updated portions of Permit Attachment KK.
 - D. Under column 4, update and complete list of narrative description, tables, and figures.
 - E. Under column 5, update and replace the "Reserved" with the appropriate capacity.
- IV.A.8.e.ii. Permit Table IV.2., shall be completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading.
- IV.A.8.e.iii. Permit Table IV.3., shall be completed for the DBVS Facility tank system leak detection system instruments and parameters to provide the information as specified in each column heading.
- IV.A.8.f. The following amendments to Permit Attachment KK are hereby made. The Permittees shall submit the revised pages reflecting these amendments to Ecology prior to installation of the DBVS tank system as identified in Permit Table IV.1. These amendments do not constitute a permit modification pursuant to Permit Conditions I.C.2. and I.C.3.:
- IV.A.8.f.i. Figure B-4, revised to include two (2) additional Waste and Simulant Staging Tanks, consistent with Permit Table IV.1., the first numbered 32-D74-016 and the second to be numbered.
 - IV.A.8.f.ii. Figure B-6, revised to include four additional Tri-Mer Effluent Tanks, consistent with Permit Table IV.1.
 - IV.A.8.f.iii. Figure B-4, revised to include one additional Tri-Mer Bleed Sump Tank, consistent with Permit Table IV.1.

TABLE IV.1.

DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) FACILITY TANK SYSTEMS DESCRIPTION

Dangerous and/or Mixed Waste Tank Systems Name	System Designation and Equipment Number	Engineering Description (Drawing No., Specification No., etc.) ^b	Narrative Description, Table & Figures	Maximum Capacity (gallons)
Waste and Simulant Staging Tank	WRS-Tanks RESERVED	RESERVED	Sections 2.3.2 and 4.2.3; Table 2-1; Figures 2-3, 2-4, and Figure B-7	1,000
Waste and Simulant Staging Tanks #1 #2 #3 #4	DBVS-Tanks 32-D74-002 32-D74-003 32-D74-016 RESERVED	Permit Attachment KK, Appendix 2, Section 2, Drawing #s: DBVS-SK-M105 and F-145579-00-P-0005, Section 5, Specification #: F-145579-D-SP-028.	Sections 2.3.2 and 4.2.2.2; Table 2-1; Figures 2-2 and B-1	18,000 18,000 18,000 18,000
Receiver Tank From Bottom of Dryer	DBVS-Tanks	RESERVED	RESERVED	RESERVED
Dry Waste Receiver Units #1 #2	DBVS-Tanks 33-D64-088 33-D64-089	Permit Attachment LL, Appendix 5, Section 3, Drawings # DBVS-SK-M107, Sheets 2 & 3., Permit Attachment KK, Appendix 5, Section 5 Specification # 145579-D-SP-032	Sections 2.3.3 and 4.2.8 and Figure B-1	RESERVED

90% Design Modification

July 24, 2006

Dryer Condensate Tanks	DBVS-Tanks 37-D74-009 37-D74-010	Permit Attachment KK, Appendix 4, Section 3, Drawing F-145579-37-A-0101; Section 5, Specification 145570-D-SP-031	Sections 2.6 and 4.3.2; Table 4-5; Figures 2-2, B-1, and B-4	Dryer Condensate: 18,000 18,000
Dryer Offgas Condensate Tank	DBVS-Tanks 33-D74-015 33-D74-033	Permit Attachment KK, Appendix 3, Section 3, Drawing F-145579-33-A-0101; Section 5, Specification 145579-D-SP-006	Figure B-1 and B-4	500
Venturi Scrubber System (VSS) #1	DBVS Tank 36-D74-052	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification 145579-V-SP-037	Sections 2 and 4; Figures B-2 and B-5	690 690
Venturi Scrubber System (VSS) Bleed Tanks #1	DBVS -Tanks 37-D74-011	Permit Attachment KK, Appendix 4, Section 3, Drawing F-145579-37-A-0101; Section 5, Specification 145570-D-SP-031	Section 4.2.15; Figures 2-2, B-2, and B-5	18,000 18,000

TABLE IV.2.

**DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) FACILITY TANK
 SYSTEMS SECONDARY CONTAINMENT SYSTEMS
 INCLUDING SUMPS AND FLOOR DRAINS**

Sump/Floor Drain I.D. No. & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing No., Specification No., etc.)
WRS Pump Skid, Sample Room	RESERVED	RESERVED	Permit Attachment KK, Appendix 2, Section 2, Drawing # DBVS-SK- M101. Section 5, Specification 145579-D-SP- 027
Pump Skid, Equipment Room	RESERVED	RESERVED	Permit Attachment KK, Appendix 2, Section 2, Drawing # DBVS-SK- M101, Section 5, Specification 145579-D-SP- 027
Waste Receipt Tanks: 32-D74-002 32-D74-003 32-D74-016	RESERVED	RESERVED	Permit Attachment KK, Appendix 2, Section 2, Drawing # DVBS-SK- M105, Section 5, Specification: 145579-D-SP- 028

Sump/Floor Drain I.D. No. & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing No., Specification No., etc.)
Secondary Waste System Pump Skid	RESERVED	RESERVED	Permit Attachment KK, Appendix 4, Section 3, Drawing F-145579-37-A-0100, Section 5, Specification 145579-D-SP-011
Secondary Waste Tanks Dryer Condensate 37-D74-009 37-D74-010	RESERVED	RESERVED	Permit Attachment KK, Appendix 4, Section 3, Drawing F-145579-37-A-0101; Section 5, Specification 145570-D-SP-031
Venturi Scrubber Bleed 37-D74-011	RESERVED	RESERVED	Permit Attachment KK, Appendix 4, Section 3, Drawing F-145579-37-A-0101; Section 5, Specification 145570-D-SP-031
Waste Dryer Off-gas Condensate Tank 33-D74-015 33-D74-033	RESERVED	RESERVED	Permit Attachment KK, Appendix 3, Section 3, Drawing F-145579-33-A-0101;

90% Design Modification

July 24, 2006

Sump/Floor Drain I.D. No. & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing No., Specification No., etc.)
			Section 5, Specification 145579-D-SP-006.
Scrubber Tank 36-D74-052	RESERVED	RESERVED	Permit Attachment LL, Appendix 7, Section 3, Drawing F-145579-36-A-0100, Specification 145579-D-SP-037

TABLE IV.3.

DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) FACILITY TANK SYSTEMS PROCESS AND LEAK DETECTION SYSTEM INSTRUMENTS AND PARAMETERS

Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
Pump Skid Equipment Room Sump Level Indication F-145579-32-A-0100	Level	TT-Mini-Probe	32-LSH-011	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Pump Skid Sample Room Sump Level Indication F-145579-32-A-0100	Level	TT-Mini-Probe	32-LSH-032	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Waste Receipt Tanks: 32-D74-002 32-D74-003 32-D74-016 F-145579-32-A-0101	Level	TT-Mini-Probe	32-LSH-103 32-LSH-203 32-LSH-303	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Secondary Waste Pump Skid	Level	TT-Mini-Probe	37-LSH-007	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Scrubber Tank	Level	TT-Mini-Probe	37-LSH-123	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Secondary Waste Tanks Dryer Condensate 37-D740009 37-D74-010	Level	TT-Mini-Probe	37-LSH-103 37-LSH-203	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Venturi Scrubber Bleed 37-D74-011	Level	TT-Mini-Probe	37-LSH-303	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

90% Design Modification

July 24, 2006

Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
Waste Dryer Off-gas Condensate Tank Level 33-D74-015 33-D74-033	Level	TT-Mini-Probe	33-LIT-017	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

PART V. – DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS)

For purposes of Permit Part V, where reference is made to WAC 173-303-640, the following substitutions apply: substituting the terms “DBVS” for “tank system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and “sub-system(s) or sub-system equipment of a DBVS” for “component(s)” in accordance with WAC 173-303-680, with the exception that these substitutions do not apply to the subsystems that are marked with an asterisk or an “a” on Permit Tables V.1. and V.4. and do not apply to ICV® Stations listed on Permit Tables V.1. and V.4. For purposes of Permit Part V., all references to Permit Attachment LL shall be read as references to Permit Attachment LL, as modified pursuant to Permit Condition V.I.

V.A. GENERAL CONDITIONS

V.A.1. CONSTRUCTION AND MAINTENANCE

[WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-340].

- V.A.1.a. The Permittees shall construct the DBVS (listed in Permit Tables V.1. and V.4.), as specified in Permit Attachment LL and Permit Part V.
- V.A.1.b. The Permittees shall construct all containment systems for the DBVS as specified in Permit Attachment LL and Part V. of this Permit.
- V.A.1.c. The Permittees shall ensure all certifications required by specialists (e.g., independent, qualified registered professional engineer, independent corrosion expert, independent, qualified installation inspector, etc.) use the certification statement listed in WAC 173-303-810(13).
- V.A.1.d. The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the DBVS during installation. Prior to covering, enclosing, or placing the new DBVS or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of similar systems or components, must inspect the system for the presence of any of the following items:
 - V.A.1.d.i. Weld breaks;
 - V.A.1.d.ii. Punctures;
 - V.A.1.d.iii. Scrapes of protective coatings;
 - V.A.1.d.iv. Cracks;
 - V.A.1.d.v. Corrosion; or
 - V.A.1.d.vi. Other structural damage or inadequate construction/installation.

90% Design Modification

July 24, 2006

All discrepancies must be remedied before the DBVS is covered, enclosed, or placed into use [WAC 173-303-640(3)(c), in accordance with WAC 173-303-680(2) and (3)].

- V.A.1.e. For the DBVS components, as applicable, that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the DBVS component and compacted to ensure that the DBVS component is fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].
- V.A.1.f. The Permittees must test for tightness the DBVS components, as applicable, prior to being covered, enclosed, or placed into use. If the DBVS components are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the DBVS component being covered, enclosed, or placed into use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-680(2) and (3)].
- V.A.1.g. The Permittees must ensure the DBVS equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].
- V.A.1.h. The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Permit Attachment LL. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].
- V.A.1.i. For each DBVS sub-system holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees shall operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].
- V.A.1.j. The independent DBVS installation inspection and subsequent written statements shall be certified pursuant to V.A.1.c., to comply with all requirements of WAC 173-303-640(3)(h), in accordance with WAC 173-303-680, and shall consider, but not be limited to, the following DBVS System installation documentation:
 - V.A.1.j.i. Field installation report with date of installation;
 - V.A.1.j.ii. Approved welding procedures;
 - V.A.1.j.iii. Welder qualification and certifications;

90% Design Modification

July 24, 2006

- V.A.1.j.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
- V.A.1.j.v. Tester credentials;
- V.A.1.j.vi. Field inspector credentials;
- V.A.1.j.vii. Field inspector reports;
- V.A.1.j.viii. Field waiver reports; and
- V.A.1.j.ix. Non-compliance reports and corrective action (including field waiver reports) and repair reports.
- V.A.1.k. The Permittees shall ensure periodic integrity assessments are conducted on the DBVS sub-systems which are not marked with an asterisk or an "a" on Permit Tables V.1. and V.4., over the term of this Permit in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Permit Attachment II, as revised pursuant to Permit Condition II.D.2.
- V.A.1.l. The Permittees shall address problems detected during the DBVS System integrity assessments specified in Permit Condition V.A.1.k., following the integrity assessment program in Permit Attachment II, as modified pursuant to Permit Condition II.D.2.
- V.A.1.m. Process monitors/instruments, as specified in Permit Tables V.3. and V.6., shall be equipped with operational alarms to warn of deviation, or imminent deviation from the limits specified in Permit Tables and V.7. and V.8. and Permit Attachment LL.
- V.A.1.n. The Permittees shall install and test all process and leak detection system monitors/instrumentation as specified in Permit Tables V.3. and V.6. in accordance with Permit Attachment LL.
- V.A.1.o. No dangerous and/or mixed waste shall be treated in the DBVS unless the operating conditions, specified under Permit Condition V.C. are complied with.
- V.A.1.p. The Permittees shall not place dangerous and/or mixed waste, treatment reagents, or other materials in the DBVS if these substances could cause the sub-system, sub-system equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)].
- V.A.1.q. The Permittees shall operate the DBVS to prevent spills and overflows using controls and practices as required under WAC 173-303-640(5)(b) and in Permit

90% Design Modification

July 24, 2006

Condition II.C. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(c)(ix)].

- V.A.1.r. The Permittees shall mark all DBVS sub-systems holding dangerous and/or mixed waste with labels, or signs, to identify the waste contained in the DBVS sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the DBVS sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- V.A.1.s. The Permittees shall ensure that the secondary containment systems for the DBVS sub-systems listed in Permit Tables V.1. and V.4., are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during use of the DBVS sub-systems. Any indication that a crack or gap may exist in the containment systems shall be investigated and repaired in accordance with Permit Attachment II, as revised pursuant to Permit Condition II.D.2. [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-320].
- V.A.1.t. The Permittees must immediately, and safely, remove from service any DBVS or secondary containment system which through an integrity assessment is found to be “unfit for use” as defined in WAC 173-303-040, following Permit Condition V.A.1.v. The affected DBVS or secondary containment system must be either repaired or closed in accordance with Permit Condition V.A.1.v. [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].
- V.A.1.u. An impermeable interior coating or lining, as specified in Permit Attachment LL, shall be maintained for all concrete containment systems and concrete portions of containment systems for each DBVS sub-system listed in Permit Tables V.1. and V.4. pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and concrete containment systems that have construction joints shall meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2). The coating shall prevent migration of any dangerous and/or mixed waste into the concrete. All coatings shall meet the following performance standards:
- V.A.1.u.i. The impermeable interior coating or lining must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;
- V.A.1.u.ii. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or

90% Design Modification

July 24, 2006

physical damage to the coating or lining can be identified and remedied before dangerous and/or mixed waste could migrate from the system; and

- V.A.1.u.iii. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].
- V.A.1.v. The Permittees shall inspect all secondary containment systems for the DBVS sub-systems listed in Permit Tables V.1. and V.4. in accordance with the Inspection Schedule specified in Permit Attachment II, as modified pursuant to Permit Condition II.D.2., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6) and (7), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:
- V.A.1.v.i. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the DBVS sub-systems or secondary containment system.
- V.A.1.v.ii. Determine the source of the dangerous and/or mixed waste.
- V.A.1.v.iii. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of the DBVS sub-systems shall be, as a minimum, managed as dangerous and/or mixed waste.
- V.A.1.v.iv. If the cause of the release was a spill that has not damaged the integrity of the DBVS sub-system, the Permittees may return the DBVS sub-system to service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees shall take action to insure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur [WAC 173-303-320(3)].
- V.A.1.v.v. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary DBVS System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees shall comply with the requirements of WAC 173-303-640(7) and take the following actions:
- Close the DBVS sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Permit Condition II.H., as revised pursuant to Permit Condition II.H.9.; or
 - Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition V.A.1.c.) the DBVS, in accordance with

90% Design Modification

July 24, 2006

Permit Attachment II, as revised pursuant to Permit Condition II.D.2. before the DBVS is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

- V.A.1.v.vi. The Permittees shall document in the operating record actions/procedures taken to comply with i. through v. above as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-680(2) and (3).
- V.A.1.v.vii. In accordance with WAC 173-303-680(2) and (3), the Permittees shall notify and report releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).
- V.A.1.w. If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from damaged or broken pipes) cannot be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification shall provide the information in i., ii., and iii. listed below. The Permittees shall provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:
 - V.A.1.w.i. Reasons for delayed removal;
 - V.A.1.w.ii. Measures implemented to ensure continued protection of human health and the environment; and
 - V.A.1.w.iii. Current actions being taken to remove liquids from secondary containment.
- V.A.1.x. Air pollution control devices and capture systems in the DBVS shall be maintained and operated in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the DBVS System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets shall be established.
- V.A.1.y. In all future narrative permit submittals, the Permittees shall include DBVS sub-system names with the sub-system designation.
- V.A.1.z. Changes to approved design, plans, and projected performance documentation in Permit Attachment LL for the DBVS shall require that the Permittee submit and receive written approval from Ecology, except as specified in Permit Conditions II.A.8., II.A.9., or II.I. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.
- V.A.1.aa. Prior to initial receipt of dangerous and/or mixed waste in the DBVS, the Permittees shall obtain and keep on file in the DBVS operating record, written statements by

90% Design Modification

July 24, 2006

those persons required to certify the design of the DBVS and supervise the installation of the DBVS, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that the DBVS and corresponding containment system listed in Permit Tables V.2. and V.5., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

V.B. PERFORMANCE STANDARDS

The Permittees shall provide information supporting DBVS targeted and actual performance in the DBVS Campaign Plans and DBVS Campaign Summary Reports, respectively, as specified in Permit Conditions V.I.6., V.I.7., V.I.8., V.I.9., and V.I.10.

V.C. OPERATING CONDITIONS

[WAC-303-670(6), in accordance with WAC 173-303-680(2) and (3)].

V.C.1. The Permittees shall operate the DBVS in accordance with Permit Attachment LL, Permit Part V., and in accordance with the following:

V.C.1.a. The Permittees shall operate the DBVS in order to maintain the systems and process parameters listed in Permit Tables V.3., V.6., V.7., and V.8., within the set-points specified in Permit Table V.8.

V.C.1.b. The Permittees shall operate the Emergency Parameter Control/Response System, specified in Permit Table V.8., to respond (e.g., automatically cut-off and/or lock-out the dangerous and mixed waste feed to the DBVS, etc.) as specified in Permit Table V.8. when the operating conditions exceed the set-points specified in Permit Table V.8.

V.C.1.c. The Permittees shall operate the Emergency Parameter Control/Response System, specified in Permit Table V.8., to respond (e.g., automatically cut-off and/or lock-out the dangerous and mixed waste feed to the DBVS, etc.) as specified in Permit Table V.8. when any instrument or component specified on Permit Tables V.7. and V.8. for setting or measuring the monitored parameter fail or operate outside its span value.

V.C.1.d. The Permittees shall operate the Emergency Parameter Control/Response System, specified in Permit Table V.8. to respond (e.g., automatically cut-off and/or lock-out the dangerous and mixed waste feed to the DBVS, etc.) as specified in Permit Table V.8. when any portion of the DBVS that is specified for operation in the Ecology Approved DBVS Campaign Plan pursuant to Permit Conditions V.I.6. and V.I.7. is bypassed. The terms "bypassed" and "bypass event" as used in Permit Part V. shall mean if any portion of the DBVS is bypassed so that gases are not treated

90% Design Modification

July 24, 2006

as specified in the Ecology Approved DBVS Campaign Plan, pursuant to Permit Conditions V.I.6., V.I.7., and V.I.8.

- V.C.1.e. In the event of a malfunction of the Emergency Parameter Control/Response System, specified in Permit Table V.8., to respond (e.g., automatically cut-off and/or lock-out the dangerous and mixed waste feed to the DBVS, etc.) as specified in Permit Table V.8. The Permittees shall not resume operations as prior to the malfunction until the problem causing the malfunction has been identified and corrected.
- V.C.1.f. The Permittees shall manually implement the response specified in Permit Table V.8. when the operating conditions deviate from the limits specified in Permit Condition V.C.1.b., unless the deviation automatically, as specified in Permit Table V.8., activates the response sequence specified in Permit Conditions V.C.1.b., V.C.1.c., and/or V.C.1.d.
- V.C.1.g. The Permittees shall control fugitive emissions from the DBVS by maintaining/operating the DBVS offgas systems in accordance with Permit Conditions II.A.4. and II.A.5.
- V.C.1.h. The Permittees shall not exceed fifty percent (50%) of the organic design capacity of the carbon filter and shall change-out the carbon filter prior to commencement of the next DBVS Campaign if it is projected that this capacity would be exceeded during a DBVS Campaign.
- V.C.1.i. The Permittees shall change-out the carbon filter following detection of organic break-through as specified in Permit Attachment LL.

V.D. INSPECTION REQUIREMENTS
[WAC 173-303-680(3)].

- V.D.1. The Permittees shall inspect the DBVS and the DBVS Emergency Parameter Control/Response System in accordance with the Inspection Schedules in Permit Attachment II, as modified pursuant to II.D.2.
- V.D.2. The inspection data for DBVS and the DBVS Emergency Parameter Control/Response System shall be recorded, and the records shall be placed in the DBVS operating record for the DBVS, in accordance with Permit Conditions II.D. and II.G.
- V.D.3. The Permittees shall comply with the inspection requirements specified in Permit Attachment II, as revised pursuant to Permit Condition II.D.2.

V.E. MONITORING REQUIREMENTS
[WAC 173-303-670(5), (6), and (7) and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)].

- V.E.1. The Permittees shall comply with the monitoring requirements specified in Permit Attachment LL, Ecology approved DBVS Campaign Plan, and Permit Part V.
- V.E.2. The Permittees shall operate, calibrate, and maintain the carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate emission, and organic monitors, and any other monitors required for the DBVS by the Ecology approved DBVS Campaign Plan in accordance with the EPA Performance Specifications in 40 CFR Part 60, Appendix B, as specified in Attachment LL of this Permit, the Ecology approved DBVS Campaign Plan, and Part V. of this Permit.
- V.E.3. The Permittees shall operate, calibrate, and maintain the instruments specified on Permit Tables V.3., V.6., and V.8., in accordance with Attachment LL of this Permit, the Ecology approved DBVS Campaign Plan, and Part V. of this Permit.
- V.F. RECORDKEEPING REQUIREMENTS
[WAC 173-303-380 and WAC 173-303-680(3)].
- V.F.1. The Permittees shall record and maintain in the operating record for the DBVS, all monitoring, calibration, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions II.D., and II.G.
- V.F.2. The Permittees shall record in the DBVS operating record the date, time, and duration of Emergency Parameter Control/Response System activation (e.g., automatic waste feed cutoffs and/or lockouts, etc.) including the triggering parameters, reason for the deviation, and recurrence of the incident. The Permittees shall also record all incidents of the Emergency Parameter Control/Response System function failures, including the corrective measures taken to correct the condition that caused the failure.
- V.G. CLOSURE

The Permittees shall close the DBVS System in accordance with Permit Condition II.H., as revised pursuant to Permit Condition II.H.9.
- V.H. PHASE 1 AND PHASE 2 CAMPAIGNS
[WAC 173-303-670(5), (6), and (7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- V.H.1. The Permittees shall conduct Phase 1 and Phase 2 in accordance with Permit Attachment LL, Ecology approved DBVS Campaign Plan and Permit Part V.
- V.H.2. Phase 1 and Phase 2 Limitations and Allowable Waste Feed
- V.H.2.a. The Permittees shall comply with the Phase 1 and Phase 2 feed limits specified on Permit Table V.7., Permit Conditions II.A. and II.B., the Ecology approved DBVS

90% Design Modification

July 24, 2006

Campaign Plan pursuant to Permit Conditions V.I.6., V.I.7., and V.I.8., and Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8., and amended to exclude feed of D001 and D003.

V.H.3. The Permittees shall not commence Phase 1 until the Permittees have submitted and received Ecology approval for the Phase 1 DBVS Campaign Plan pursuant to Permit Condition V.I.6.

V.H.4. The Permittees shall not commence the first campaign under Phase 2 until the following has occurred:

V.H.4.a. The Permittees have submitted the portions of the Phase 1 DBVS Campaign Summary Report to Ecology, as specified in Permit Condition V.I.9., that were identified in DBVS Phase 1 Campaign Plan, as approved by Ecology, as critical to development of the first campaign under Phase 2's DBVS Campaign Plan.

V.H.4.b. The Permittees have submitted and received Ecology approval for the first Phase 2 DBVS Campaign Plan pursuant to Permit Condition V.I.7.

V.H.5. The Permittees shall not commence each subsequent campaign under Phase 2 until the following has occurred:

V.H.5.a. The Permittees have submitted the portions of the previous Phase 2 DBVS Campaign Summary Report(s) to Ecology, as specified in Permit Condition V.I.9., that were identified in the previous DBVS Phase 2 Campaign Plan(s), as approved by Ecology, as critical to development of this subsequent DBVS Phase 2 Campaign Plan.

V.H.5.b. The Permittees have submitted and received Ecology approval for the DBVS Campaign Plan under Phase 2, which the Permittees are requesting approval to commence pursuant to Permit Conditions V.I.7. and/or V.I.8.

V.I. COMPLIANCE SCHEDULES

V.I.1. All information identified for submittal to Ecology in V.I.2. through V.I.5. and in V.I.10. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12).

V.I.2. Prior to construction of each secondary containment and leak detection system for the DBVS as identified in Permit Tables V.2. and V.5., the Permittees shall submit and receive Ecology approval for the engineering information as specified below, for incorporation into Permit Attachment LL. At a minimum, engineering information specified below will show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings and information on sumps and floor

90% Design Modification

July 24, 2006

drains). Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:

- V.I.2.a. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) shall include review of design drawings, calculations, and other information on which the certification report is based and shall include as applicable, but not limited to, review of such information described below- (drawings, specifications, etc.). IQRPE Reports shall be consistent with the information separately provided in b. through f. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];
- V.I.2.b. Design drawings to include references to codes and standards (General Arrangement Drawings, in plan, and cross sections) and projected performance documentation for the foundation, secondary containment including liner installation details, and leak detection methodology. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];
- V.I.2.c. The Permittees shall provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information shall demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- V.I.2.d. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];
- V.I.2.e. Secondary containment/foundation, and leak detection system, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials) as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)]; and
- V.I.2.f. Detailed description of how the secondary containment for the DBVS will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B).
- V.I.3. Prior to installation of each sub-system as identified in Permit Tables V.1. and V.4., the Permittees shall submit and receive approval from Ecology for the engineering information as specified below, for incorporation into Permit Attachment LL (the

90% Design Modification

July 24, 2006

information specified below will include dimensioned engineering drawings). Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3.:

- V.I.3.a. IQRPE Reports verifying that the subsystems that are not marked with an asterisk on Permit Tables V.1. and V.4. have sufficient structural integrity and are acceptable for the storing and treating of dangerous and/or mixed waste shall include review of design drawings, calculations, and other information on which the certification report is based and shall include as applicable a review of such information described below. The IQRPE Reports shall be consistent with the information separately provided in b. through e. below, and the IQRPE Report specified in Permit Condition V.I.2. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];
- V.I.3.b. For subsystems that are marked with an asterisk on Permit Tables V.1. and V.4. the Permittees shall provide design information including: updated Appendix B of Permit Attachment LL process flow diagrams, piping and instrumentation diagrams (including pressure control systems and mass and energy balances), physical and chemical tolerances of equipment, projected performance documentation, instrumentation/control loops, and materials of construction;
- V.I.3.c. For subsystems that are not marked with an asterisk on Permit Tables V.1. and V.4. shall provide design information including: design drawings (General Arrangement Drawings in plan and cross section, references to codes and standards, updated Appendix B of Permit Attachment LL process flow diagrams, piping and instrumentation diagrams [including pressure control systems and mass and energy balances]), projected performance documentation, instrumentation/control loops for each subsystem, materials of construction, analysis/design methodology, fan curves for exhaust fan 1 (36-N31-025) and exhaust fan 2 (36-N31-026), physical and chemical tolerances of equipment, carbon filter organic (volatile, semi-volatile and non-volatile) design capacity and typical design details to support the subsystems and projected operational capability [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- V.I.3.d. A detailed description of how the subsystems that are not marked with an asterisk or an "a" on Permit Tables V.1. and V.4. will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B); and
- V.I.3.e. Subsystem design to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, and to prevent the build-up of explosive gases/vapors [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)].
- V.I.4. Prior to initial receipt of dangerous and/or mixed waste in the DBVS, the Permittees shall submit and receive Ecology approval of the following, as specified below, for

90% Design Modification

July 24, 2006

incorporation into Permit Attachment LL. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions V.I.2. and V.I.3., as approved by Ecology:

- V.I.4.a. A correction factor, with supporting description, and monitoring, that can be applied to the performance standards specified in Permit Condition V.I.6.f. that would assure that the design and operation of the DBVS promotes the reduction of the total quantity of dangerous/hazardous constituents released as air emissions by maximizing removal and destruction of constituents prior to release from the exhaust stack versus significant reduction of the concentration of the emissions in the exhaust by increased dilution air. The supporting description shall discuss how it will be applied and the appropriateness of its application to each performance standard specified in Permit Condition V.I.6.f. and specific details on how the factor will be monitored during operation.
- V.I.4.b. Detailed Description of an Emergency Parameter Control/Response System addressing operating parameters specified in Permit Tables V.7. and V.8., as approved pursuant to Permit Conditions V.I.4.k. and V.I.6.c.
- V.I.4.c. Integrity assessment program and schedule for the DBVS shall address the conducting of periodic integrity assessments on the DBVS subsystems which are not marked with an asterisk or an "a" on Permit Tables V.1. and V.4., over the life of the system, as specified in Permit Condition V.A.1.k. and WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)].
- V.I.4.d. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Leak detection for HIHTL shall detect, within 24-hours, a leak rate as specified by the Permittees' *Temporary Waste Transfer Line Management Program, RPP-12711*. Provide a table summarizing line length, total holdup volume until detection, total time until detection occurs, and minimum detectable leak rate.
- V.I.4.e. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(i)(i)(B)].

90% Design Modification

July 24, 2006

- V.I.4.f. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from the DBVS or containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).
- V.I.4.g. Description of procedures for inspection and repair of the DBVS [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(i)(i)(B)].
- V.I.4.h. The Permittees will provide a description of procedures for management of dangerous and/or mixed waste as specified in WAC 173-303-640(9) and (10) with the waste codes listed in Table 6-1, excluding characteristic code D001 and D003 of Permit Attachment BB, in accordance with Permit Attachment BB, as changed pursuant to Permit Conditions II.B.7. and II.B.8.
- V.I.4.i. A description of the tracking system used to manage dangerous and/or mixed waste generated throughout the DBVS, pursuant to WAC 173-303-380.
- V.I.4.j. Detailed description of procedures for start-up and shutdown of waste feed and controlling and minimizing emissions in the event of an equipment malfunction, including off-normal and emergency shutdown procedures, procedures for switching to back-up systems and tie into Permit Tables V.7. and V.8. and Appendix E of Permit Attachment LL.
- V.I.4.k. Emergency Condition Parameter Limit Values as Appendix E of Permit Attachment LL and Permit Tables V.3., V.6., and V.8. completed to include this information. These emergency condition parameters should include parameters to warn of potential for fire, explosion, loss of sufficient vacuum in the DBVS offgas systems to recover emissions from the areas, systems or units, loss of DBVS subsystem vessel integrity, and off-normal operating conditions that could lead to potential for release from DBVS. Appendix E shall include a narrative description and information to support the parameters and limits values, parameter loop narratives, along with their process functions, the response required when they trip, and instrument fail safe condition.
- V.I.4.l. ICV® Container Refractory Information as Appendix F of Permit Attachment LL.
- V.I.4.m. Continuous emission monitor for measuring organic breakthrough of the DBVS carbon filter. Include monitor specifications, proposed location, monitoring plan and documentation that the monitor is capable of detecting the organics (volatile, semi-volatile, and non-volatile) that could potentially be emitted from the DBVS.
- V.I.4.n. Detailed procedures for maintaining and documenting in the DBVS operating record, a running count of the organic inventory fed to DBVS Waste Dryer from the DBVS Facility on a per campaign basis of spiked and non-spiked constituents and

90% Design Modification

July 24, 2006

change-out of the carbon filter so as not to exceed 50% of the organic design capacity of the carbon filter.

- V.I.4.o. Operation, calibration, and maintenance procedures for the particulate matter, carbon monoxide, nitrogen oxides, sulfur oxides, organic continuous emission monitors, and the monitoring for the correction factor under Permit Condition V.I.4.a., including references to the technically appropriate specifications from 40 CFR Part 60, Appendix B, for each parameter.
- V.I.4.p. Description of the design/operating resolutions developed to address the following potential DBVS shortfalls:
 - V.I.4.p.i. Main offgas system not meeting ASME AG-1, N509, N510.
 - V.I.4.p.ii. Tri-Mer subsystem capacity insufficient to handle incoming gas flow.
 - V.I.4.p.iii. Excessive ICV® Package bottom temperature.
 - V.I.4.p.iv. Waste Dryer not demonstrated to be able to achieve a total operating efficiency of at least 70%.
- V.I.4.q. Section 4.2.14, page 4-10 of Permit Attachment LL, first sentence is revised as follows: “The mixer/dryer emissions will be partially treated for moisture removal using a glycol-cooled condenser prior to being routed to the main offgas treatment system.”
- V.I.4.r. Section 4.2.16, page 4-12 of Permit Attachment LL, second sentence is revised as follows: “However, if the Phase 1 offgas treatment system performance does not meet expectations, changes to the system will be made with prior Ecology approval.”
- V.I.5. Prior to initial receipt of dangerous and/or mixed waste in the DBVS, the Permittees shall submit and receive Ecology approval of the following as specified below for incorporation into this Permit. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions V.I.2., V.I.3., and V.I.4., as approved by Ecology:
 - V.I.5.a. Permit Tables V.3. and V.6. shall be completed for DBVS leak detection system instruments and parameters, to provide the information as specified in each column heading [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)].
 - V.I.5.b. Permit Tables V.1. and V.4. amended as follows [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)]:

90% Design Modification

July 24, 2006

- V.I.5.b.i. Under column 1, update and complete list of dangerous and/or mixed waste DBVS subsystems.
- V.I.5.b.ii. Under column 2, update and complete system designations.
- V.I.5.b.iii. Under column 3, replace 'Reserved' with the appropriate references (e.g., drawing numbers, etc.) to the updated portions of Permit Attachment LL.
- V.I.5.b.iv. Under column 4, update and complete list of narrative description, tables, and figures.
- V.I.5.b.v. Under column 5, update and replace "Reserved" with the appropriate capacity.
- V.I.5.c. Submit Permit Tables V.2. and V.5. completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading consistent with information to be provided in V.I.2.a. through V.I.2.f. above.
- V.I.6. Prior to initial receipt of dangerous and/or mixed waste in the DBVS, the Permittees shall submit and receive approval from Ecology for the Phase 1 DBVS Campaign Plan. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. The Phase 1 DBVS Campaign Plan shall include the information specified in Section 5 and Appendix A of Permit Attachment LL in addition to the following:
- V.I.6.a. Updated Demonstration Test Matrix, as appropriate to the DBVS Campaign Plan and identification of the portions of the information expected to be collected during this campaign and to be included in this DBVS Campaign Summary Report, that are critical to development of subsequent DBVS Campaign Plan(s), including clearly identifying which DBVS Campaign Plan(s) the information is projected to be critical to.
- V.I.6.b. Sampling, analysis, and QA/QC procedures/methods for any constituents/samples necessary to implement the DBVS Campaign Plan that were not addressed in Permit Attachment BB, as revised pursuant to Permit Conditions II.B.7. and II.B.8. These sampling, analysis, and QA/QC procedures/methods must explicitly address data needed to demonstrate LDR compliance for constituents in Tables 6-1 and 6-3 of Permit Attachment BB.
- V.I.6.c. Updated, as appropriate to the DBVS Campaign Plan, Appendix E of Permit Attachment LL and Permit Tables V.3., V.6., and V.8. completed to include this updated information. Appendix E shall include a narrative description and information to support the updated parameters and limits values specified.
- V.I.6.d. Changes to DBVS Facility including updates to all impacted portions of the Permit and Permit Attachments, as appropriate to the DBVS Campaign Plan.

- V.I.6.e. Documentation (e.g., engineering calculations, test data, and/or manufacturer/vendor's warranties/operations and maintenance documentation, etc.) to support that the DBVS Campaign Plan design and operation during the campaign is projected to meet the performance standards specified in Permit Condition V.I.6.f. within and at the bounding conditions detailed as follows:

(For purposes of this permit condition outside of expected bounds of process operations shall be defined as follows):

Fifty percent (50%) of the metals specified on Table V.7., as fed to the DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System are retained in the ICV® Melt and the remainder of the metals enter the main offgas treatment system (as specified on Permit Tables V.1. and V.4. and Permit Attachment LL), with the exception of mercury which would be assumed to enter the main offgas treatment system (as specified on Permit Tables V.1. and V.4. and Permit Attachment LL) at one hundred percent (100%) of the concentration as fed to the DBVS Waste Dryer from the DBVS Waste and Stimulant Staging Tank Feed System.

Zero percent (0%) of the organics as fed to the DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System are retained in the ICV® Melt. One hundred percent (100%) of the volatile organics, and fifty percent (50%) of the semi-volatile organics as fed to the DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System enter the Dryer Offgas Treatment System, which includes the Main Offgas Treatment System subsystems downstream of mist eliminator #3 (36-N24-041). Fifty percent (50%) of the semi-volatile organics and one hundred percent (100%) of nonvolatile organics as feed to the DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System enter the Main Offgas Treatment System (as specified on Permit Tables V.1. and V.4. and Permit Attachment LL).

Zero percent (0%) of the constituents that contribute to the formation of HCl, NO_x, and SO_x as fed to the DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System are retained in the ICV® melt and one hundred percent (100%) of these constituents that contribute to the formation of HCl, NO_x, and SO_x as feed to DBVS Waste Dryer from the DBVS Waste and Simulant Staging Tank Feed System are available to form HCL, NO_x, and SO_x in the ICV® melt or in the Main Offgas Treatment System (as specified on Permit Tables V.1. and V.4. and Permit Attachment LL).

Dryer Offgas Treatment System and the Main Offgas Treatment System operation at or below lower bounds of expected efficiencies, as specified on Permit Tables V.1. and V.4. and Permit Attachment LL.

- V.I.6.f. Performance Standards (as referenced in Permit Condition V.I.6.e.)

- V.I.6.f.i. A destruction and removal efficiency (DRE) of ninety-nine point nine, nine percent (99.99%) for the Organic Compounds listed on Table 6-1 of Permit Attachment BB [40 CFR §63.1203(c)(1), 40 CFR 63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

DRE in this permit condition shall be calculated in accordance with the formula given below:

$$DRE=[1-(W_{out}/W_{in})] \times 100\%$$

Where:

W_{in} =mass feed-of the organic compound in a waste feed stream; and

W_{out} =mass emission of the same organic compound present in emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere.

- V.I.6.f.ii. Particulate matter emissions from the DBVS offgas exhaust stack (36-N26-024) prior to the atmosphere not exceeding 34 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)].
- V.I.6.f.iii. Hydrochloric acid and chlorine gas emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)].
- V.I.6.f.iv. Dioxin and Furan TEQ emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 0.2 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)].
- V.I.6.f.v. Mercury emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 45 µg/dscm [40 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)].
- V.I.6.f.vi. Lead and cadmium emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 120 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)].
- V.I.6.f.vii. Arsenic, beryllium, and chromium emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)].
- V.I.6.f.viii. Carbon monoxide (CO) emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2)].

- V.I.6.f.ix. Hydrocarbon emissions from the DBVS offgas exhaust stack (36-N26-024) prior to release to the atmosphere not exceeding 10 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis, and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2)].
- V.I.6.g. Document that fifty percent (50%) of the organic design capacity of the carbon filter, as specified in Permit Attachment LL, will not be exceeded during this DBVS Campaign.
- V.I.6.h. Documentation of the expected levels of constituents in DBVS feed materials and additives during the DBVS Campaign which have the potential to impact the performance of the DBVS with respect to the Performance Standards identified in Permit Condition V.I.6.f. and update Permit Tables V.7. and V.8.
- V.I.6.i. Updated Appendix B of the Permit Attachment LL to reflect the equipment configuration that will be followed for the DBVS Campaign.
- V.I.7. Prior to commencement of the Phase 2 DBVS Campaign and prior to commencement of each Phase 2 DBVS Campaign, Permittees shall submit and receive approval from Ecology for the Phase 2 DBVS Campaign Plan, except as specified in Permit Condition V.I.8. Such approval shall not require a permit modification under Permit Conditions I.C.2. and I.C.3. The Phase 2 DBVS Campaign Plan shall include the information specified in Permit Condition V.I.6.

In addition, the Phase 2 DBVS Campaign Plans shall be designed to collect the information specified in Permit Conditions V.I.7.c. through V.I.7.e. (below) and the Phase 2 DBVS Campaign Plans designed to provide "Feed Envelope Verification and/or Process Improvement," shall also include the information specified in Permit Conditions V.I.7.a. and V.I.7.b. (below):

- V.I.7.a. Emission testing for demonstrating performance standards listed in Permit Condition V.I.6.f.
- V.I.7.b. Detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, planned analytical procedures for sample analysis and a short summary narrative description of each stack sample method with identification of the performance standard(s) identified in Permit Condition V.I.6.f. that the method will be used to demonstrate the performance of the DBVS.
- V.I.7.c. One or more test campaigns shall be conducted to generate mass balance information sufficient to address the fate/concentration of potential constituents of concern, such as Iodine-129 and Technetium-99, within the ICV® Package and its

90% Design Modification

July 24, 2006

various components, the offgas systems, offgas systems' secondary liquid waste, and solid and secondary semi-solid waste.

- V.I.7.d. One or more test campaigns shall be conducted to generate information to assess the potential for waste minimization as it relates to secondary liquid waste.
- V.I.7.e. One or more test campaigns shall be conducted to generate information to assess how potential future recycled waste from the WTP could be incorporated into a Bulk Vitrification full-scale production facility waste stream, should Ecology make the decision to permit a full-scale production facility, and the impacts related to including these recycles into the DBVS Facility waste stream. These test campaigns would be specifically designed to observe, record, and analyze impacts related to waste loading and potential constituents of concern, such as sulfate, sodium, metals, iodine, and technetium.
- V.I.8. The Permittee shall not require Ecology approval for a Phase 2 DBVS Campaign Plan(s) prior to commencement of the individual campaign under the following conditions, as an exception to Permit Condition V.I.7. The first Phase 2 DBVS Campaign Plan and the DBVS Phase 2 Campaign Plan which addresses the information specified in Permit Conditions V.I.7.a. and V.I.7.b. are not eligible for this exception. Any DBVS Phase 2 Campaign Plan that qualifies for this exception shall be considered an Ecology Approved DBVS Campaign Plan for the purposes of this Permit:
- V.I.8.a. DBVS Campaign Plans that do not require submittal of information under Permit Conditions V.I.6.b., V.I.6.c., V.I.6.d., or V.I.6.i.
- V.I.9. The Permittees shall submit to Ecology a Draft DBVS Campaign Report within ninety (90) days after the completion of each campaign that includes the following (NOTE: Preliminary analytical data is acceptable):
- V.I.9.a. Information specified in Section 9.3.1 of Permit Attachment GG;
- V.I.9.b. Information specified in Section 5 and Appendix A of Permit Attachment LL;
- V.I.9.c. Information collected to document the capability of the DBVS to meet the performance standards specified in Permit Condition V.1.6.f.;
- V.I.9.d. Information collected to document organic design capacity remaining in DBVS Carbon Filter; and
- V.I.9.e. Information collected to document implementation of the DBVS control system during the campaign including:
- V.I.9.e.i. The parameter(s) that deviated from the set-point(s) in Permit Table V.8.;

90% Design Modification

July 24, 2006

- V.I.9.e.ii. The magnitude, dates, and duration of the deviations;
- V.I.9.e.iii. Results of the investigation of the cause of the deviations; and
- V.I.9.e.iv. Corrective measures taken to minimize future occurrences of the deviations.
- V.I.10. The Permittees shall submit to Ecology the Final DBVS Campaign Summary Report within one hundred and twenty (120) days after the completion of the last DBVS Campaign Summary Report as specified in V.I.9. that includes the information specified in Permit Conditions V.I.9.b., c., d., e., and the following:
 - V.I.10.a. The information specified in Section 9.3.2 of Permit Attachment GG; and
 - V.I.10.b. All quarterly Calibration Error and Annual Performance Specification Tests for monitors conducted in accordance with Permit Condition V.E.2.
 - V.I.10.c. ICV® Package detailed final limitations for size, durability, compressibility, stacking, handling, retrievability from storage and after final disposal, outside and inside package residual contamination, disposal facility, and testing/acceptance requirements.

This page intentionally left blank.

TABLE V.1.

**DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) - PHASE 1
 DESCRIPTION FOR NON-MAJOR COMPONENTS (E.G., PUMPS, FILTERS, FANS,
 COMPRESSORS, ETC. NOT SPECIFICALLY LISTED)**

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Control system for feed from the Waste & Simulant Staging Tanks to Waste Dryer ^{a*} (Waste Transfer Pump Skid)	32-D58-007	RESERVED	Sections 2.3.2, 2.3.3, 4.2, 4.2.1, 4.2.2.1, 4.2.3, 4.2.4, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A
Waste Dryer including:	33-D25-006	Permit Attachment LL; Appendix 3; Section 3, Drawing F-145579-33-A-0100; Section 5, Specification 145579-D-SP-006	Sections 2.3.3, 4.2, 4.2.1, 4.2.8, 4.2.12, 4.2.14, 4.2.15, 4.2.17; Tables 4-1, 4-5; Figures 2-2, B-1, B-2, B-4, and B-5	2645
Dust Recycle Feed to Dryer ^a	00-A-0016			NA
Waste Dryer Sintered Metal Filter	33-NO2-014			
Waste Dryer HEPA Filter	33-NO2-017			
Waste Drying System including: Control system for clean soil feed to dryer ^{a*} The waste dryer steam supply control system ^{a*} Control System for glass former additives feed to dryer ^{a*}	33-D58-068	Permit Attachment LL, Appendix 3, Section 3, Drawings F-145579-31-A-0101, F-145579-33-A-0100 & F-145579-33-A-0105; Section 5, Specifications 145579-D-SP-006 & 145579-D-SP-007	Sections 2.3.3, 4.2, 4.2.1, 4.2.8, 4.2.12, 4.2.14, 4.2.15, 4.2.17; Tables 4-1, 4-5; Figures 2-2, B-1, and B-4	N/A

90% Design Modification

July 24, 2006

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
DRYER OFFGAS TREATMENT SYSTEM				
Dryer Offgas Condenser including: Condenser chilled water feed control system ^{a*}	33-D10-005	Permit Attachment LL, Appendix 3, Section 3, Drawing F-145579-33-A-0101; Section 5, Specification 145579-D-SP-006	Sections 4.2.14, 4.2.17; Tables 4-2, 4-3, 4-5; Figures 2-2, B-1, and B-4	NA
DRIED WASTE HANDLING SYSTEM				
Dry Waste Receiver Unit Sintered Metal Filters #1 and #2	33-NO2-101 33-NO2-102	Permit Attachment LL, Appendix 5, Section 3, Drawing F-145579-33-A-0106,	Sections 2.3.3, and 4.2.8	NA
Dry Waste HEPA Filters No. 1 and No. 2	33-NO2-097 33-NO2-098	Permit Attachment LL, Appendix 5, Section 3, Drawing F-145579-33-A-0106	Sections 2.3.3, and 4.2.8	NA
ICV® STATIONS				
Vitrification Container Preparation*	NA	Permit Attachment LL, Appendix 6, Section 3, Drawing # F-145579-35-D-0018	Sections 4.2.9, 4.2.17; Tables 4-1, 4-5; Figures 2-2 and B-1	N/A
ICV® System (Container Waste Fill, ICV® Melt & Vented Cooling) including: Dry waste feed control system ^a	33-D64-088 33-D64-089	Permit Attachment LL, Appendix 6, Section 3, Drawings F-145579-33-A-0100, F-145579-33-A-0101 & F-145579-33-A-0106, Section 5, Specifications 145579-D-SP-017, 145579-D-SP-018,	Section 2.2.1, 4.2.11, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A

90% Design Modification

July 24, 2006

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Top-off, and Container Sealing including: Top-off soil feed control system ^{a*}	31-D74-007, 31-D74-008, 31-D74-009	Permit Attachment LL, Appendix 5, Section 3, Drawings F-145579-31-A-0100 & F-145579-34-A-0101, Section 5, Specifications 145579-D-DS-055.1 & 145579-D-SP-018	Section 2.2.1, 4.2.11, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A
Transport to Storage Pad (Sample Point)*	35-D48-003	Permit Attachment LL, Appendix 6, Section 5, Specification 145579-D-DS-012.1	Section 2.2.1, 4.2.11; Figures 2-2, B-1, and B-4	N/A
MAIN OFFGAS TREATMENT SYSTEM				
Sintered Metal Filter #1	36-N02-019	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0099, Section 5, Specification 145579-V-SP-002	Sections 4.2.12, 4.2.15, 4.2.17; Table 4-2; Figures B-2 and B-5	N/A
Sintered Metal Filter #2	36-N02-020	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0099, Section 5, Specification 145579-V-SP-002	Sections 4.2.12, 4.2.15, 4.2.17; Table 4-2; Figures B-2 and B-5	N/A
Venturi Scrubber System (VSS)-1 Packed Tower Quencher #1	36-N83-034	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification 145579-D-SP-037	Sections 4.2.4, 4.2.12, 4.2.15, 4.2.17; Tables 4-1, 4-3; Figures B-2 and B-5	RESERVED

90% Design Modification

July 24, 2006

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
VSS-1 Scrubber Feed System Tank #1 ^{a*} includes: Caustic make-up feed control system ^{a*}	36-D74-052	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.4, 4.2.6, 4.2.12, 4.2.15, 4.2.17; Table 4-5; Figures B-2 and B-5	N/A
VSS-1 Heat Exchanger #1 includes: Chilled water feed control system ^{a*}	36-D30-046	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Figures B-2 and B-5	RESERVED
VSS -1 Scrubber #1	36-N73-035	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.4, 4.2.12, 4.2.15, 4.2.17; Tables 4-1, 4-2, 4-4, 4-5; Figures B-2 and B-5	RESERVED
VSS-1 Mist Eliminator #1	36-N24-036	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.15, 4.2.17; Tables 4-1, 4-2, 4-3; Figures B-2 and B-5	N/A
Scrubber Condenser	36-D10-040	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-037	Figures B-2 and B-5	N/A

90% Design Modification

July 24, 2006

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Mist Eliminator #3	36-N24-041	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-037	Figures B-2 and B-5	N/A
HEPA Filter Heater*	36-N84-042	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-036	Sections 4.2.6, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-2, 4-3, 4-5, 4-6; Figures 2-2 and B-2	N/A
HEPA Filters #1 #2 #3 #4	36-N02-114A 36-NO2-114B 36-NO2-114C 36-NO2-114D	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-D-SP-036	Sections 4.2.12, 4.2.15, 4.2.17; Tables 4-2, 4-6; Figures B-2 and B-5	N/A
Carbon Filter #1 #2	36-NO2-064 36-NO2-106	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-V-SP-010	Sections 4.2.12, 4.2.15, 4.2.17, 4.3.3; Tables 4-2, 4-6; Figures 2-2, B-2, and B-5	N/A
Offgas Polishing Filter	36-NO2-79	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-V-SP-010	Figures 2-2 and B-3	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
SCR Heater*	36-N84-078A 36-N84-078B	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, and B-6	N/A
SCR Catalyst Bed including: Ammonia feed control system ^{a*}	36-D59-003	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, and B-6	N/A
SCR Heat Exchanger*	36-D30-077	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, and B-6	N/A
Ammonia scrubber including: Dilute H ₂ SO ₄ feed control system ^{a*}	RESERVED	RESERVED	Figures B-3 and B-6	N/A
OGTS Emergency Bypass HEPA Filters	36-NO2-131 36-NO2-133	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-1445579-36-A-0108, Section 5, Specification 145579-V-SP-017	Section 4.2.15	N/A

90% Design Modification

July 24, 2006

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Offgas Exhaust Stack*	36-N26-024	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0105, Section 5, Specification 145579-V-SP-005	Section 4.2.12, 4.2.17; Figures 2-2, B-3, and B-6	N/A

^a These subsystems only include feed control system components, with the exception of the boiler, which only includes the steam control system for the dryer. No substitution of terms as referenced in Permit Conditions II.G.2.e. and V. are to be made in this Permit for these subsystems.

* No substitution of terms as referenced in Permit Conditions II.G.2.e. and V. are to be made in this Permit for these subsystems.

N/A means no secondary containment required

TABLE V.2.
DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) -PHASE 1
SECONDARY CONTAINMENT SYSTEMS INCLUDING SUMPS AND FLOOR
DRAINS

Sump/Floor Drain I.D. No. & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing No., Specification No., etc.)
Waste Dryer Skid 33-D58-068	RESERVED	RESERVED	Permit Attachment LL, Appendix 3, Section 3, Drawing F-145579-33-A- 0100, Section 5, Specification 145579-D-SP-006
RESERVED	RESERVED	RESERVED	RESERVED

TABLE V.4.

**DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) - PHASE 2
 DESCRIPTION FOR NON-MAJOR COMPONENTS (E.G., PUMPS, FILTERS, FANS,
 COMPRESSORS, ETC NOT SPECIFICALLY LISTED)**

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Control system for feed from the Waste & Simulant Staging Tanks to Waste Dryer ^{a*} (Waste Transfer Pump Skid)	32-D58-007	RESERVED	Sections 2.3.2, 2.3.3, 4.2, 4.2.1, 4.2.2.1, 4.2.3, 4.2.4, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A
Waste Dryer including: Dust Recycle Feed to Dryer ^a Waste Dryer Sintered Metal Filter Waste Dryer HEPA Filter	33-D25-006 00-A-0016 33-NO2-014 33-NO2-017	Permit Attachment LL; Appendix 3; Section 3, Drawing F-145579-33-A-0100; Section 5, Specification 145579-D-SP-006	Sections 2.3.3, 4.2, 4.2.1, 4.2.8, 4.2.12, 4.2.14, 4.2.15, 4.2.17; Tables 4-1, 4-5; Figures 2-2, B-1, B-2, B-4, and B-5	2645 NA
Waste Drying System including: Control system for clean soil feed to dryer ^{a*} The waste dryer steam supply control system ^{a*} Control System for glass former additives feed to dryer ^{a*}	33-D58-068	Permit Attachment LL, Appendix 3, Section 3, Drawings F-145579-31-A-0101, F-145579-33-A-0100 & F-145579-33-A-0105; Section 5, Specifications 145579-D-SP-006 & 145579-D-SP-007	Sections 2.3.3, 4.2, 4.2.1, 4.2.8, 4.2.12, 4.2.14, 4.2.15, 4.2.17; Tables 4-1, 4-5; Figures 2-2, B-1, and B-4	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
DRYER OFFGAS TREATMENT SYSTEM				
Dryer Offgas Condenser including: Condenser chilled water feed control system ^{a*}	33-D10-005	Permit Attachment LL, Appendix 3, Section 3, Drawing F-145579-33-A-0101; Section 5, Specification 145579-D-SP-006	Sections 4.2.14, 4.2.17; Tables 4-2, 4-3, 4-5; Figures 2-2, B-1, and B-4	NA
DRIED WASTE HANDLING SYSTEM				
Dry Waste Receiver Unit Sintered Metal Filters #1 and #2	33-NO2-101 33-NO2-102	Permit Attachment LL, Appendix 5, Section 3, Drawing F-145579-33-A-0106,	Sections 2.3.3, and 4.2.8	NA
Dry Waste HEPA Filters No. 1 and No. 2	33-NO2-097 33-NO2-098	Permit Attachment LL, Appendix 5, Section 3, Drawing F-145579-33-A-0106	Sections 2.3.3, and 4.2.8	NA
ICV® STATIONS				
Vitrification Container Preparation*	NA	Permit Attachment LL, Appendix 6, Section 3, Drawing # F-145579-35-D-0018	Sections 4.2.9, 4.2.17; Tables 4-1, 4-5; Figures 2-2 and B-1	N/A
ICV® System (Container Waste Fill, ICV® Melt & Vented Cooling) including: Dry waste feed control system ^a	33-D64-088 33-D64-089	Permit Attachment LL, Appendix 5, Section 3, Drawings F-145579-33-A-0100, F-145579-33-A-0101 & F-145579-33-A-0106, Section 5, Specifications 145579-D-SP-017, 145579-D-SP-018,	Section 2.2.1, 4.2.11, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Top-Off, and Container Sealing including: Top-off soil feed control system ^{a*}	31-D74-007, 31-D74-008, 31-D74-009	Permit Attachment LL, Appendix 5, Section 3, Drawings F-145579-31-A-0100 & F-145579-34-A-0101, Section 5, Specifications 145579-D-DS-055.1 & 145579-D-SP-018	Section 2.2.1, 4.2.11, 4.2.12, 4.2.17; Table 4-1; Figures 2-2, B-1, and B-4	N/A
Transport to Storage Pad (Sample Point)*	35-D-48-003	Permit Attachment LL, Appendix 6, Section 5, Specification 145579-D-DS-012.1	Section 2.2.1, 4.2.11; Figures 2-2, B-1, and B-4	N/A
MAIN OFFGAS TREATMENT SYSTEM				
Sintered Metal Filter #1	36-N02-019	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0099, Section 5, Specification 145579-V-SP-002	Sections 4.2.12, 4.2.15, 4.2.17; Table 4-2; Figures B-2 and B-5	N/A
Sintered Metal Filter #2	36-N02-020	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0099, Section 5, Specification 145579-V-SP-002	Sections 4.2.12, 4.2.15, 4.2.17; Table 4-2; Figures B-2 and B-5	N/A
Venturi Scrubber System (VSS)-1 Packed Tower Quencher #1	36-N83-034	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification 145579-D-SP-037	Sections 4.2.4, 4.2.12, 4.2.15, 4.2.17; Tables 4-1, 4-3; Figures B-2 and B-5	RESERVED

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
VSS-1 Scrubber Feed System Tank #1 ^{a*} includes: Caustic make-up feed control system ^{a*}	36-D74-052	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.4, 4.2.6, 4.2.12, 4.2.15, 4.2.17; Table 4-5; Figures B-2 and B-5	N/A
VSS-1 Heat Exchanger #1 includes: Chilled water feed control system ^{a*}	36-D30-046	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Figures B-2 and B-5	RESERVED
VSS -1 Scrubber #1	36-N73-035	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.4, 4.2.12, 4.2.15, 4.2.17; Tables 4-1, 4-2, 4-4, 4-5; Figures B-2 and B-5	RESERVED
VSS-1 Mist Eliminator #1	36-N24-036	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0100, Section 5, Specification # 145579-S-SP-037	Sections 4.2.15, 4.2.17; Tables 4-1, 4-2, 4-3; Figures B-2 and B-5	N/A
Scrubber Condenser	36-D10-040	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-037	Figures B-2 and B-5	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
Mist Eliminator #3	36-N24-041	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-037	Figures B-2 and B-5	N/A
HEPA Filter Heater*	36-N84-042	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0102, Section 5, Specification 145579-D-SP-036	Sections 4.2.6, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-2, 4-3, 4-5, 4-6; Figures 2-2 and B-2	N/A
HEPA Filters #1 #2 #3 #4	36-N02-114A 36-NO2-114B 36-NO2-114C 36-NO2-114D	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-D-SP-036	Sections 4.2.12, 4.2.15, 4.2.17; Tables 4-2, 4-6; Figures B-2 and B-5	N/A
Carbon Filter #1 #2	36-NO2-064 36-NO2-106	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-V-SP-010	Sections 4.2.12, 4.2.15, 4.2.17, 4.3.3; Tables 4-2, 4-6; Figures 2-2, B-2, and B-5	N/A
Offgas Polishing Filter	36-NO2-79	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0107, Section 5, Specification 145579-V-SP-010	Figures 2-2 and B-3	N/A
SCR Heater*	36-N84-078A 36-N84-078B	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, B-6	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
SCR Catalyst Bed including: Ammonia feed control system ^{a*}	36-D59-003	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, and B-6	N/A
SCR Heat Exchanger*	36-D30-077	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0103, Section 5, Specification 145579-V-SP-001	Sections 4.2.4, 4.2.6, 4.2.7, 4.2.12, 4.2.15, 4.2.17, 4.3; Tables 4-1, 4-2, 4-5, 4-6; Figures 2-2, B-3, and B-6	N/A
Ammonia scrubber including: Dilute H ₂ SO ₄ feed control system ^{a*}	RESERVED ¹	RESERVED	Figures B-3 and B-6	N/A
OGTS Emergency Bypass HEPA Filters	36-NO2-131 36-NO2-133	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-1445579-36-A-0108, Section 5, Specification 145579-V-SP-017	Section 4.2.15	NA
Offgas Exhaust Stack*	36-N26-024	Permit Attachment LL, Appendix 7, Section 3, Drawing # F-145579-36-A-0105, Section 5, Specification 145579-V-SP-005	Section 4.2.12, 4.2.17; Figures 2-2, B-3, and B-6	N/A

Sub-system Description	Sub-system Designation	Engineering Description (Drawing No., Specification No., etc.)	Narrative Description, Tables and Figures	Maximum Capacity (gallons)
-------------------------------	-------------------------------	---	--	-----------------------------------

^a These subsystems only include feed control system components, with the exception of the boiler, which only includes the steam control system for the dryer. No substitution of terms as referenced in Permit Conditions II.G.2.e. and V. are to be made in this Permit for these subsystems.

* No substitution of terms as referenced in Permit Conditions II.G.2.e. and V. are to be made in this Permit for these subsystems.

N/A means no secondary containment required

TABLE V.5.

**DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) – PHASE 2
SECONDARY CONTAINMENT SYSTEMS INCLUDING SUMPS AND FLOOR
DRAINS**

Sump/Floor Drain I.D. No. & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing No., Specification No., etc.)
Waste Dryer Skid 33-D58-068	RESERVED	RESERVED	Permit Attachment LL, Appendix 3, Section 3, Drawing F- 145579-33-A- 0100, Section 5, Specification 145579-D-SP- 006
RESERVED	RESERVED	RESERVED	RESERVED

TABLE V.7.
**MAXIMUM FEED AND FEED-RATES TO DEMONSTRATION BULK
 VITRIFICATION SYSTEM (DBVS) – PHASE 1 AND 2**

Description of Waste	Phase 1	Phase 2
Tank 241-S-109 Waste	1080 gallons	300,000 gallons
# of ICV® Container Loads	3	50 minus number of ICV® Container Loads processed during Phase 1
Dryer Feed (pounds/hour)	RESERVED	RESERVED
Mixed Waste	RESERVED	RESERVED
Simulant Dangerous Waste	RESERVED	RESERVED
Simulant Non-Dangerous Waste		
Soil	RESERVED	RESERVED
ICV® Feed (pounds/hour)	RESERVED	RESERVED
Mixed Waste	RESERVED	RESERVED
Simulant Dangerous Waste	RESERVED	RESERVED
Simulant Non-Dangerous Waste	RESERVED	RESERVED
Soil	RESERVED	RESERVED
Dryer Feed (pounds/hour)		
Total Chlorine/Chloride Feed-rate	RESERVED	RESERVED
Total Metal Feed-rates		
Arsenic	RESERVED	RESERVED
Cadmium	RESERVED	RESERVED
Chromium (total)	RESERVED	RESERVED
Lead	RESERVED	RESERVED
Mercury	RESERVED	RESERVED
Beryllium	RESERVED	RESERVED
Total Organics (Organic Compounds listed on Table 6-1 of Attachment BB of this Permit.	RESERVED	RESERVED

TABLE V.8.

**DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS) EMERGENCY
PARAMETER CONTROL / RESPONSE SYSTEM (RESERVED)**

Sub-system Designation	Instrument or Component Tag Number	Parameter Description	Setpoints Limits During Phase 1	Setpoints Limits During Phase 2 Campaign No.	Respond to Deviation from setpoint*
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

*(e.g., automatically cut-off and/or lock-out the dangerous and mixed waste feed to the DBVS, etc.)

This page intentionally left blank.

PART VI – FACILITY SUBMITTAL SCHEDULE

Any procedure, method, data, or information contained in this document that relates solely to radionuclides or to the radioactive source, byproduct material, and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) is not provided for the purpose of regulating the radiation hazards of such components under the authority of this Permit and Chapter 70.105 RCW.

TABLE VI.1.

REQUIRED SUBMITTALS AND COMPLIANCE SCHEDULE

Reference	Required Submission	Date or Event
PART II – GENERAL FACILITY CONDITIONS		
I.E.9.	The Permittees may not commence treatment or storage of dangerous and/or mixed waste in any new or modified portion of the facility, until the requirements of I.E.9.a. through I.E.9.a.ii. have been met.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.B.7.	The Permittees shall submit to Ecology the revised pages of Permit Attachment BB reflecting the amendments in II.B.7.a. through II.B.7.z. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.B.8.	The Permittees shall submit and receive written approval from Ecology for Permit Attachment BB revisions reflected in II.B.8.a. through II.B.8.c.i. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.B.8.d.	The Permittees shall submit to Ecology for approval and strictly for this RD&D Permit, documentation, not based solely on process knowledge that shows the removal of the characteristic code D001 and D003 from S-109 tank waste.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.

Reference	Required Submission	Date or Event
II.B.9.	The Permittees shall submit Section 2 of Permit Attachment AA amended as described in II.B.9.a. through II.B.9.c. specified “for information only.”	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.C.6.	The Permittees shall submit and receive written approval from Ecology for Permit Attachment FF, revisions reflected in II.C.6.a. through II.C.6.a.viii. of this Permit, with the exception of II.C.6.a.viii. A., which will be incorporated into the Permit Administrative Record.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.D.2.	The Permittees shall update and resubmit and receive written approval from Ecology for the Inspection Schedule in Permit Attachment II. The revised schedule shall include, but not be limited to, II.D.2.a. through II.D.2.c. of this Permit. In addition, the Permittees shall submit to Ecology for incorporation into the Administrative Record, the basis for developing Inspection Schedule frequencies.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.E.3.	The Permittees shall update and resubmit and receive approval from Ecology for the Training Program description in Permit Attachment CC. The revised Training Program description shall include, but not be limited to, the information requested in II.E.3.a. through II.E.3.b. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility units.
II.F.4.	The Permittee shall submit the revised page to Ecology reflecting the amendment in II.F.4. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste.
II.F.5.	The Permittees shall update and resubmit and receive written approval from Ecology of Permit Attachment DD to be consistent with design details and schedule described in Parts III, IV, and V and Attachments JJ, KK, and LL of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.

Reference	Required Submission	Date or Event
II.F.6.	The Permittees shall review and amend, if necessary, the applicable portions of the Contingency Plan, Permit Attachment DD, in accordance with the provisions of WAC 173-303-350(5) and WAC 173-303-830(4). The amended Contingency Plan shall be submitted to Ecology as a Permit Modification pursuant to Permit Conditions I.C.2. and I.C.3.	After initial receipt of dangerous and/or mixed waste.
II.F.7.	The Permittees shall revise, resubmit, and receive written approval from Ecology of Permit Attachment DD to include the information in II.F.7.a. and II.F.7.b. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.G.2.b.vii.	Generator Report – Form 4 as required in WAC 173-303-220(1).	Annually, after initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.G.2.b.viii.	TSD Facility Report – Form 5 in compliance with WAC 173-303-390(2).	Annually, after initial receipt of dangerous and/or mixed waste in the DBVS Facility.
II.H.2.	The Permittees shall submit and receive written approval from Ecology, for any update to the Closure Plan, Attachment EE.	Prior to commencing partial closure.
II.H.3.	The Permittees shall submit and receive written approval from Ecology for a Sampling and Analysis Plan and a revised Closure Plan.	Prior to commencing final closure.
II.H.6.	The Permittees are required to furnish documentation supporting the independent registered professional engineer’s certification to Ecology upon request, until Ecology has notified the Permittees in writing that Ecology agrees with and has accepted the Permittees’ closure certification. The closure documentation must include at a minimum the information contained in II.H.6.a. through II.H.6.h. of this Permit.	After closure activities have been completed.

Reference	Required Submission	Date or Event
II.H.9.	The Permittees shall update and resubmit and receive written approval from Ecology for the Closure Plan, Permit Attachment EE, to be consistent with design details and schedule described in Permit Attachments JJ, KK, and LL. The updated Closure Plan, Permit Attachment EE, must be consistent with the closure performance standards specified in WAC 173-303-610(2).	Prior to initial receipt of dangerous and/or mixed waste in DBVS Facility.
II.H.10.	The Permittee shall submit the revised page reflecting the amendment in II.H.10. of this Permit to Ecology.	Prior to initial receipt of dangerous and/or mixed waste in DBVS Facility.
II.I.	The Permittees must submit documentation of a substitution of an equivalent or superior equipment, materials and/or administrative information, accompanied by a narrative explanation and the date the substitution became effective.	Place in the operating record and submit to Ecology within seven days of putting the substitution into effect.
PART III – CONTAINER MANAGEMENT PRACTICES		
III.G.2.	The Permittees shall submit and receive written approval from Ecology for engineering information as specified in III.G.2.a. of this Permit for incorporation into Attachment JJ.	Prior to construction of the DBVS Facility container storage area.
III.G.3.	The Permittees shall submit and receive written approval from Ecology for Permit Table III.1. updated to include the contents of Column 2 “Engineering Description,” to reflect the engineering information provided under III.G.2.a. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste to the DBVS Facility.
III.G.4.a through III.G.4.g.	The Permittees shall update and submit and receive written approval from Ecology for the following, as specified in Permit Conditions III.6.4.a. through III.6.4.g., for incorporation into Permit Attachment JJ.	Prior to initial receipt of dangerous and/or mixed waste to the DBVS Facility.

Reference	Required Submission	Date or Event
SECTION IV – TANK SYSTEMS		
IV.A.8.b.	The Permittees shall submit and receive approval from Ecology for the engineering information as specified in IV.A.8.b.i. through IV.a.8.b.viii. of this Permit for incorporation into Permit Attachment KK.	Prior to construction of each DBVS Facility Tank System.
IV.A.8.c.	The Permittees shall submit and receive approval from Ecology for the engineering information specified in IV.A.8.c.i. through IV.A.8.c.v. for incorporation into Permit Attachment KK.	Prior to installation of ancillary equipment for each DBVS Facility Tank System.
IV.A.8.d.	The Permittees shall submit and receive Ecology approval for incorporation, into Permit Attachment KK, the information specified in IV.A.8.d.i. through IV.A.8.d.vii. of this Permit. All information provided under this Permit condition must be consistent with information provided pursuant to Permit Conditions IV.A.8.b. and IV.A.8.c.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility Tank Systems.
IV.A.8.e.	The Permittees shall submit and receive Ecology approval as specified in IV.A.8.e.i. through IV.A.8.e.iii. for incorporation into this Permit. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions IV.A.8.b. through IV.A.8.d.	Prior to initial receipt of dangerous and/or mixed waste into the DBVS Facility Tank Systems.
IV.A.8.f.	The Permittees shall submit the revised pages for incorporation into Permit Attachment KK as specified in IV.A.8.f.i. through IV.A.8.f.iii. of this Permit to Ecology.	Prior to installation of the DBVS Tank System as identified in Permit Table IV.1.
SECTION V – DEMONSTRATION BULK VITRIFICATION SYSTEM (DBVS)		
V.A.1.z.	Changes to approved design, plans, and projected performance documentation in Permit Attachment LL for the DBVS shall require that the Permittee submit and receive written approval from Ecology, except as specified in Permit Conditions II.A.8., II.A.9., or II.I.	As needed.

Reference	Required Submission	Date or Event
V.H.3.	The Permittees shall not commence Phase 1 until the Permittees have submitted and received Ecology approval for the Phase 1 DBVS Campaign Plan pursuant to Permit Condition V.I.6.	Prior to start of Phase 1.
V.H.4.	The Permittees shall not commence the first campaign under Phase 2 until the requirements in V.H.4.a. through V.H.4.b. of this Permit have been met.	Prior to start of Phase 2.
V.H.5.	The Permittees shall not commence each subsequent campaign under Phase 2 until the actions listed in V.H.5.a. through V.H.5.b. have occurred.	Before commencing each subsequent campaign under Phase 2.
V.I.2.	The Permittee shall submit and receive Ecology approval for the engineering information as specified in V.I.2.a. through V.I.2.f. for incorporation into Permit Attachment LL.	Prior to construction of each secondary containment and leak detection system for the DBVS as identified in Permit Tables V.2. and V.5.
V.I.3.	The Permittee shall submit and receive approval from Ecology for the engineering information as specified in V.I.3.a. through V.I.3.e. of this Permit for incorporation into Permit Attachment LL.	Prior to installation of each sub-system as identified in Permit Tables V.1. and V.4.
V.I.4.	The Permittee shall submit and receive Ecology approval as specified in V.I.4.a. through V.I.4.r. of this Permit for incorporation into Permit Attachment LL. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions V.I.2. and V.I.3., as approved by Ecology.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
V.I.5.	The Permittees shall submit and receive Ecology approval as specified in V.I.5.a. through V.I.5.c., for incorporation into this Permit. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions V.I.2., VI.3., and V.I.4., as approved by Ecology.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.

Reference	Required Submission	Date or Event
V.I.6.	The Permittee shall submit and receive approval from Ecology for the Phase 1 DBVS Campaign Plan. The Phase 1 DBVS Campaign Plan shall include the information specified in Sections 5 and Appendix A of Permit Attachment LL in addition to V.I.6.a. through V.I.6.i. of this Permit.	Prior to initial receipt of dangerous and/or mixed waste in the DBVS Facility.
V.I.7.	The Permittees shall submit and receive approval from Ecology for the Phase 2 DBVS Campaign Plan, except as specified in Permit Condition V.I.8. The Phase 2 DBVS Campaign Plan shall include the information specified in Permit Condition V.I.6. In addition, the Phase 2 DBVS Campaign Plans shall be designed to collect the information specified in Permit Conditions V.I.7.c. through V.I.7.e. and the Phase 2 DBVS Campaign Plans designed to provide "Feed Envelope Verification and/or Process Improvement," shall also include the information specified in Permit Conditions V.I.7.a. and V.I.7.b.	Prior to commencement of the Phase 2 DBVS Campaign and prior to commencement of each Phase 2 DBVS Campaign.
V.I.9.	The Permittees shall submit to Ecology the Draft DBVS Campaign Report that includes information listed in V.I.9.a. through V.I.9.e.iv. of this Permit.	Within 90 days after the completion of the Draft DBVS Campaign Report.
V.I.10.	The Permittees shall submit to Ecology a Final DBVS Campaign Summary Report that includes the information specified in V.I.9.b. through V.I.9.e. and V.I.10.a. through V.I.10.c. of this Permit.	Within 120 days after the completion of the last DBVS Campaign Report specified in V.I.9.