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**PART III, OPERATING UNIT GROUP 10
WASTE TREATMENT AND IMMOBILIZATION PLANT**

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PART III, OPERATING UNIT GROUP 10

WASTE TREATMENT AND IMMOBILIZATION PLANT

The Waste Treatment and Immobilization Plant (WTP) is the operating treatment and storage unit designed to treat the mixed (radioactive and dangerous) waste currently stored in underground tanks at the Hanford Site. Once the mixed waste is received at the WTP, it will be separated into High-level and Low-activity waste streams in the Pretreatment Building. The waste streams are then transferred to either the High-level Waste (HLW) Building or the Low-activity Waste (LAW) Building, mixed with glass forming additives and heated to 950-1250° C in melters, and then poured into containers. As the containerized waste cools, it is immobilized in the glass matrix. Once the waste is immobilized, the container is finished (i.e. provided with a lid and decontaminated), and then transported from the WTP for disposal.

III.10.A COMPLIANCE WITH APPROVED PERMIT

The Permittees shall comply with all requirements set forth in the Hanford Facility RCRA Dangerous Waste Permit including all approved modification. All chapters, subsection, files, tables, addendums, and appendices included in the following unit-specific Conditions are enforceable in their entirety. In the event that a Unit-Specific Condition conflicts with Permit Conditions in Parts I or II of this Permit, the Unit-Specific Conditions shall prevail.

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, special nuclear material (as defined by the Atomic Energy Act of 1954, as amended) and/or the radionuclide component of mixed waste has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit and chapter [70.105 RCW](#). In the event of any conflict between Permit Condition III.10.A and any statement relating to the regulation of source, special nuclear, and byproduct material contained in portions of the permit application that are incorporated into this permit, Permit Condition III.10.A will prevail.

OPERATING UNIT GROUP 10

Addendum A	Part A, Form 3 Permit Application, Revision 1 (October 2008)
Addendum B	Waste Analysis Plan
Addendum B1	Waste Treatment Plant Waste Analysis Plan
Addendum B2	Quality Assurance Project Plan for Waste Analysis Plan
Addendum C	Process Information
Addendum C1	Engineering Figures
Addendum C2	Supplement 1 RPP-WTP Compliance with Uniform Building Code Seismic Design
Addendum D	Groundwater Monitoring (RESERVED)
Addendum E	Procedures to Prevent Hazards
Addendum E1	Inspection Schedule
Addendum F	Contingency Plan
Addendum F1	RPP-WTP Emergency Response Plan,
Addendum G	Personnel Training
Addendum H	Closure
Appendix 1.0	Compliance Schedule
Appendix 2.0	Critical Systems
Appendix 3.0	RESERVED
Appendix 4.0	RESERVED
Appendix 5.0	RESERVED

1	Appendix 6.0	Risk Assessment
2	Appendix 6.0, §6.1	Environmental Risk Assessment Work Plan
3	Appendix 6.0, §6.1.1	Previously Submitted Preliminary Risk Assessment Work Plan
4	Appendix 6.0, §6.1.2	Documentation of Revisions to Preliminary Risk Assessment Work Plan
5	Appendix 6.0, §6.2	Final Risk Assessment Work Plan (RESERVED)
6	Appendix 6.0, §6.3	Pre-Demonstration Test Risk Assessment Report (RESERVED)
7	Appendix 6.0, §6.3.1	Basis and Assumptions (RESERVED)
8	Appendix 6.0, §6.4	Final Risk Assessment Report (RESERVED)
9	Appendix 6.0, §6.4.1	Basis and Assumptions (RESERVED)
10	Appendix 7.0	WTP Documents Applicable to All Regulated Areas
11	Appendix 7.0, §7.1	Process Flow Diagrams
12	Appendix 7.0, §7.2	Piping and Instrumentation Diagrams & Related Documents
13	Appendix 7.0, §7.3	System Description Documentation (RESERVED)
14	Appendix 7.0, §7.4	General Arrangement Drawings (RESERVED)
15	Appendix 7.0, §7.5	Civil, Structural, and Architectural Criteria and Typical Design Details
16	Appendix 7.0, §7.6	Mechanical Drawings (RESERVED)
17	Appendix 7.0, §7.7	Specifications
18	Appendix 7.0, §7.8	Engineering Calculations (RESERVED)
19	Appendix 7.0, §7.9	Material Selection and Corrosion Evaluation Documentation
20	Appendix 7.0, §7.10	Critical Systems Equipment/Instrument List (RESERVED)
21	Appendix 7.0, §7.11	IQRPE Reports
22	Appendix 7.0, §7.12	Installation Plans
23	Appendix 7.0, §7.13	Instrument Control Logic and Narrative Description (RESERVED)
24	Appendix 7.0, §7.14	Descriptions of Instrument Installation and Testing Procedures
25		(RESERVED)
26	Appendix 7.0, §7.15	Operating Documents
27	Appendix 8.0	Pretreatment Building
28	Appendix 8.0, §8.1	Process Flow Diagrams
29	Appendix 8.0, §8.2	Piping and Instrumentation Diagrams
30	Appendix 8.0, §8.3	System Description Documentation (RESERVED)
31	Appendix 8.0, §8.4	General Arrangement Drawings
32	Appendix 8.0, §8.5	Civil, Structural, and Architectural Criteria and Typical Design Details
33	Appendix 8.0, §8.6	Mechanical Drawings
34	Appendix 8.0, §8.7	Specifications
35	Appendix 8.0, §8.8	Engineering Calculations
36	Appendix 8.0, §8.9	Material Selection and Corrosion Evaluation Documentation
37	Appendix 8.0, §8.10	Critical Systems Equipment/Instrument List
38	Appendix 8.0, §8.11	IQRPE Reports
39	Appendix 8.0, §8.12	Installation Plans (RESERVED)
40	Appendix 8.0, §8.13	Instrument Control Logic and Narrative Description
41	Appendix 8.0, §8.14	Descriptions of Instrument Installation and Testing Procedures
42		(RESERVED)
43	Appendix 8.0, §8.15	Operating Documents (RESERVED)

1	Appendix 9.0	LAW Building
2	Appendix 9.0, §9.1	Process Flow Diagrams
3	Appendix 9.0, §9.2	Piping and Instrumentation Diagrams
4	Appendix 9.0, §9.3	System Description Documentation (RESERVED)
5	Appendix 9.0, §9.4	General Arrangement Drawings
6	Appendix 9.0, §9.5	Civil, Structural, and Architectural Criteria and Typical Design Details
7	Appendix 9.0, §9.6	Mechanical Drawings
8	Appendix 9.0, §9.7	Specifications
9	Appendix 9.0, §9.8	Engineering Calculations
10	Appendix 9.0, §9.9	Material Selection and Corrosion Evaluation Documentation
11	Appendix 9.0, §9.10	Critical Systems Equipment /Instrument List
12	Appendix 9.0, §9.11	IQRPE Reports
13	Appendix 9.0, §9.12	Installation Plans (RESERVED)
14	Appendix 9.0, §9.13	Instrument Control Logic, and Narrative Description
15	Appendix 9.0, §9.14	Descriptions of Instrument Installation and Testing Procedures
16		(RESERVED)
17	Appendix 9.0, §9.15	Demonstration Test Plan (RESERVED)
18	Appendix 9.0, §9.16	Demonstration Test Report (RESERVED)
19	Appendix 9.0, §9.17	Treatment Effectiveness Report (RESERVED)
20	Appendix 9.0, §9.18	Operating Documents
21	Appendix 10.0	HLW Building
22	Appendix 10.0, §10.1	Process Flow Diagrams
23	Appendix 10.0, §10.2	Piping and Instrumentation Diagrams
24	Appendix 10.0, §10.3	System Description Documentation (RESERVED)
25	Appendix 10.0, §10.4	General Arrangement Drawings
26	Appendix 10.0, §10.5	Civil, Structural, and Architectural Criteria and Typical Design
27		Details
28	Appendix 10.0, §10.6	Mechanical Drawings
29	Appendix 10.0, §10.7	Specifications
30	Appendix 10.0, §10.8	Engineering Calculations
31	Appendix 10.0, §10.9	Material Selection and Corrosion Evaluation Documentation
32	Appendix 10.0, §10.10	Critical Systems Equipment/Instrument List
33	Appendix 10.0, §10.11	IQRPE Reports
34	Appendix 10.0, §10.12	Installation Plans (RESERVED)
35	Appendix 10.0, §10.13	Instrument Control Logic and Narrative Description
36	Appendix 10.0, §10.14	Descriptions of Instrument Installation and Testing Procedures
37		(RESERVED)
38	Appendix 10.0, §10.15	Demonstration Test Plan (RESERVED)
39	Appendix 10.0, §10.16	Demonstration Test Report (RESERVED)
40	Appendix 10.0, §10.17	Treatment Effectiveness Report (RESERVED)
41	Appendix 10.0, §10.18	Operating Documents
42	Appendix 11.0	Laboratory Building
43	Appendix 11.0, §11.1	Process Flow Diagrams

1	Appendix 11.0, §11.2	Piping and Instrumentation Diagrams
2	Appendix 11.0, §11.3	System Description Documentation (RESERVED)
3	Appendix 11.0, §11.4	General Arrangement Drawings
4	Appendix 11.0, §11.5	Civil, Structural, and Architectural Criteria and Typical Design
5	Details	
6	Appendix 11.0, §11.6	Mechanical Drawings
7	Appendix 11.0, §11.7	Specifications (RESERVED)
8	Appendix 11.0, §11.8	Engineering Calculations
9	Appendix 11.0, §11.9	Material Selection and Corrosion Evaluation Documentation
10	Appendix 11.0, §11.10	Critical Systems Equipment/Instrument List
11	Appendix 11.0, §11.11	IQRPE Reports
12	Appendix 11.0, §11.12	Installation Plans (RESERVED)
13	Appendix 11.0, §11.13	Instrument Control Logic and Narrative Description
14	Appendix 11.0, §11.14	Descriptions of Instrument Installation and Testing Procedures
15	(RESERVED)	
16	Appendix 11.0, §11.15	Operating Documents (RESERVED)
17	Appendix 12.0	Balance of Facilities
18	Appendix 12.0, §12.1	Process Flow Diagrams (RESERVED)
19	Appendix 12.0, §12.2	Piping and Instrumentation Diagrams (RESERVED)
20	Appendix 12.0, §12.3	System Description Documentation (RESERVED)
21	Appendix 12.0, §12.4	General Arrangement Drawings (RESERVED)
22	Appendix 12.0, §12.5	Civil, Structural, and Architectural Criteria and Typical Design
23	Details (RESERVED)	
24	Appendix 12.0, §12.6	Mechanical Drawings (RESERVED)
25	Appendix 12.0, §12.7	Specifications (RESERVED)
26	Appendix 12.0, §12.8	Engineering Calculations (RESERVED)
27	Appendix 12.0, §12.9	Material Selection and Corrosion Evaluation Documentation
28	(RESERVED)	
29	Appendix 12.0, §12.10	Critical Systems Equipment/Instrument List (RESERVED)
30	Appendix 12.0, §12.11	IQRPE Reports (RESERVED)
31	Appendix 12.0, §12.12	Installation Plans (RESERVED)
32	Appendix 12.0, §12.13	Instrument Control Logic and Narrative Description
33	(RESERVED)	
34	Appendix 12.0, §12.14	Descriptions of Instrument Installation and Testing Procedures
35	(RESERVED)	
36	Appendix 12.0, §12.15	Operating Documents (RESERVED)

37 FACILITY-SPECIFIC DEFINITIONS

38 The following definitions are specific to the WTP Unit:

39 **Ash:** means a measure of the contribution of particulate matter from the melter feeds to the melter off-
40 gas, as determined by representative sampling and analysis of the melter feed using ASTM Method D-
41 482, or an equivalent method.

42 **Batch:** refers to waste staged in one Double Shell Tanks (DST) designated as mixed waste for transfer to
43 the WTP Unit for treatment.

- 1 **Continuous monitoring system:** means using a device which continuously samples the regulated
2 parameter specified on Permit Tables [III.10.H.F](#), [III.10.I.F](#), [III.10.J.F](#), and [III.10.K.F](#), with the exception
3 of pressure, without interruption, evaluates the detector response at least once every fifteen (15) seconds
4 and computes and records the average value at least every sixty (60) seconds, except during allowable
5 periods of calibration and except as defined otherwise by the CEMS Performance Specifications in 4B
6 and 8A in Appendix B, [40 CFR Part 60](#). For the parameter pressure, the term “continuous monitoring
7 system” means using a device that continuously samples the pressure without interruption and evaluates
8 the detector response without averaging at least once each second and records the value at least every
9 sixty (60) seconds. In addition, if the AWFCO is engaged due to a pressure exceedence, the pressure
10 value must be recorded.
- 11 **Cascade event:** means when additional waste feed cut-off parameter set points deviate outside the limits
12 specified in Permit Tables [III.10.H.F](#), [III.10.I.F](#), [III.10.J.F](#), and [III.10.K.F](#) after waste feed is cut-off, but
13 while waste or waste residues are being managed in HLW and LAW.
- 14 **Critical System:** as applied to determining whether a Permit Modification is required, means those
15 specific portions of a TSD unit’s structure, or equipment, whose failure could lead to the release of
16 dangerous waste into the environment, and/or systems which include processes which treat, transfer,
17 store, or dispose of regulated wastes. A list identifying the critical systems for the WTP is included in
18 Appendix 2.
- 19 **Dangerous and/or mixed waste management unit:** means dangerous and/or mixed waste management
20 units, areas, systems, and sub-systems as defined in Permit Tables III.10.D.A, [III.10.E.A](#) through [D](#),
21 [III.10.F.A](#), [III.10.G.A](#), [III.10.H.A](#), [III.10.I.A](#), [III.10.J.A](#), and [III.10.K.A](#).
- 22 **Dioxin/furan” and “dioxins and furans:** means tetra-, penta-, hexa-, hepta-, and octa-chlorinated
23 dibenzo dioxins and furans.
- 24 **HLW Vitrification System:** is defined as specified on Permit Tables [III.10.J.A](#) and [B](#), and [III.10.K.A](#)
25 and [B](#).
- 26 **Hourly rolling average or HRA:** will mean the arithmetic mean of the sixty (60) most recent one-
27 minute readings recorded by the continuous monitoring system.
- 28 **LAW Vitrification System:** is defined as specified on Permit Tables [III.10.H.A](#) and [B](#), and [III.10.I.A](#)
29 and [B](#).
- 30 **Mode of operation:** means operation of the LAW Vitrification System or the HLW Vitrification System
31 within set limits for each operating parameter specified in Permit Tables [III.10.H.D](#) and [F](#) (for LAW) and
32 Permit Tables III.10.I.D and F (for HLW).
- 33 **One-minute average:** means the average of detector responses calculated at least every sixty (60)
34 seconds from responses obtained at least every fifteen (15) seconds.
- 35 **Permittees:** means the United States Department of Energy (owner/operator) and Bechtel National, Inc.
36 (Co-operator).
- 37 **Pretreatment Plant Miscellaneous Unit Systems:** is defined as specified on Permit Tables [III.10.G.A](#)
38 and [B](#).
- 39 **Primary sump:** means any pit or reservoir that meets the [WAC 173-303-040](#) definition of “tank,” and
40 those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, deliberately
41 introduced (e.g., from decontamination or treatment activities), for transport to TSD facilities.
- 42 **Rolling average:** means the average of all one-minute averages over the averaging period.
- 43 **Secondary sump:** means any pit or reservoir that meets the [WAC 173-303-040](#) definition of “tank,” and
44 those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, not deliberately
45 introduced (e.g., from spills, leaks, or overflows), for transport to TSD facilities.

1 **Secondary mixed waste stream:** means treatment residues and materials derived from the treatment of
2 mixed waste which continue to designate as a dangerous, extremely hazardous, or acutely hazardous
3 waste and contains a radioactive component.

4 **Standard operating procedure or SOP:** will mean a written description of the procedures by which a
5 process, equipment, etc. will be operated. An SOP may be written by the manufacturer and/or the
6 Permittees.

7 **Successful completion of the demonstration test:** will mean operations including a minimum of three
8 test runs without significant interruptions (i.e., once initiated, each test run must be continuous, and the
9 samples have been preserved and maintained intact, and one in which sampling of exhaust gas was
10 representative of the LAW Vitrification System or HLW Vitrification System Operations, whichever is
11 applicable, and adequate to achieve evaluation of PODCs destruction and removal efficiency (DRE) to
12 99.99%).

13 **TEQ or “toxic equivalents”:** refer to the sum of the weighted potencies of 7 polychlorinated dibenzo-p
14 –dioxins (PCDDs), 10 polychlorinated dibenzofurans (PCDFs), and 12 dioxin-like (coplanar)
15 polychlorinated biphenyl (PCBs), relative to a reference compound, 2, 3, 7, 8 – tetrachlorodibenzo-p-
16 dioxin (2, 3, 7, 8 –TCDD).

17 **Pre-process:** means prior to introduction into a dangerous or mixed waste management unit at the WTP
18 Unit.

19 **In-process:** means duration of a waste in a dangerous or mixed waste management unit at the WTP Unit.

20 **Post-process:** means prior to the introduction into a subsequent dangerous or mixed waste management
21 unit at the WTP Unit or prior to shipment from the WTP Unit.

22 **Vendor information:** means documentation prepared by a vendor (e.g., catalog cut sheets) for plant
23 items that are routinely manufactured and stocked by vendors (i.e., items that are considered "off the
24 shelf") and are not being procured in accordance with Permittee’s engineering drawings and
25 specifications. Documentation such as catalog cut sheets will be annotated to specify selected items
26 which meet Permittee's procurement requirements equipment specification. Documentation associated
27 with “one of a kind”, custom items, and commercial grade items (e.g., bulk pipe, valves) that will be
28 procured in accordance with the Permittees engineering drawings and specifications is not considered
29 vendor information. Changes to the drawings and specifications may require a permit modification.

30 **Vitrification System Shutdown:** means emergency and planned shutdowns of the vitrification system as
31 defined in the operating procedure(s).

32 **Vitrification System Startup:** means startup of the vitrification system as defined in operating
33 procedure(s).

34 **FACILITY-SPECIFIC ACRONYMS**

35 The following acronyms are specific to the WTP Unit:

36	AWFCO	Automatic Waste Feed Cut-off
37	CDR	Construction Deficiency Report
38	CEMS	Continuous Emissions Monitoring System
39	CMS	Continuous Monitoring System
40	CNP	Cesium Nitric Acid Recovery Process System
41	CRP	Cesium Resin Addition Process System
42	CPE	Cathodic Protection Electrical System
43	CXP	Cesium Ion Exchange Process System
44	DFETP	Dioxin and Furan Emission Test Plan
45	DRE	Destruction and Removal Efficiency

1	Dscf	Dry standard cubic feet
2	ERP	Emergency Response Plan
3	FEP	Waste Feed Evaporation Process System
4	FRP	Waste Feed Receipt Process System
5	HCP	HLW Concentrate Receipt Process System
6	HDH	HLW Canister Decontamination Handling System
7	HEH	HLW Canister Export Handling System
8	HEME	High Efficiency Mist Eliminator
9	HEPA	High Efficiency Particulate Air Filter
10	HFH	HLW Filter Cave Handling System
11	HFP	HLW Melter Feed Process System
12	HLP	HLW Lag Storage and Feed Blending Process System
13	HLW	High-level Waste
14	HMH	HLW Melter Handling System
15	HMP	HLW Melter Process System
16	HOP	HLW Vit Primary Offgas Treatment System
17	HPH	HLW Canister Pour Handling System
18	HSH	HLW Melter Cave Support Handling System
19	IHLW	Immobilized High-Level Waste (Glass)
20	ILAW	Immobilized Low-Activity Waste (Glass)
21	IQRPE	Independent, qualified, registered, professional engineer
22	LAB	WTP Laboratory Building
23	LAW	Low Activity Waste
24	LCP	LAW Concentrate Receipt Process System
25	LEH	LAW Container Export Handling System
26	LFH	LAW Canister Finishing Handling System
27	LFP	LAW Melter Feed Process System
28	LMH	LAW Melter Handling System
29	LMP	LAW Melter Process System
30	LOP	LAW Primary Offgas Process System
31	LPH	LAW Container Pour Handling System
32	LSH	LAW Melter Equipment Support Handling System
33	LSM	Locally Shielded Melter
34	LVP	LAW Secondary Offgas/Vessel Vent Process System
35	NCR	Nonconformance Report
36	PFH	Pretreatment Filter Cave Handling System
37	PIH	Pretreatment In-Cell Handling System
38	PJV	Pulse Jet Ventilation System
39	PODC	Principal Organic Dangerous Constituents
40	PTF	Pretreatment Building
41	PVP	Pretreatment Vessel Vent Process System
42	PVV	Process Vessel Vent System
43	PWD	Plant Wash and Disposal System

1	RDP	Spent Resin and Dewatering Process System
2	RDTP	Revised Demonstration Test Plan
3	RLD	Radioactive Liquid Waste Disposal System
4	RPP-WTP	River Protection Project-Waste Treatment Plant
5	RWH	Radioactive Solid Waste Handling System
6	SBS	Submerged Bed Scrubber
7	TCP	Treated LAW Evaporation Process System
8	TLP	Treated LAW Evaporation System
9	TOC	Total Organic Carbon
10	TXP	Technetium Ion Exchange Process System
11	TEP	Technetium Eluant Recovery Process System
12	UFP	Ultrafiltration Process System
13	WESP	Wet Electrostatic Precipitator
14	WTP	River Protection Project – Waste Treatment and Immobilization Project (also known
15		as the Waste Treatment Plant and Vitrification Plant)
16	6Mo	Six Percent Molybdenum Alloy
17	304L	ASTM A240 Grade 304L Stainless Steel
18	316L	ASTM A240 Grade 316L Stainless Steel

19 **III.10.B STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS**

20 In addition to the conditions in this chapter, the Permittees must comply with all the
21 applicable portions of the Dangerous Waste Permit for the Hanford Facility. In the event
22 that a Unit-Specific Condition for the WTP Unit in Permit Conditions III.10.C. through
23 [III.10.K](#). conflicts with a general condition in Permit Conditions I and II of this permit,
24 the Unit-Specific Condition will apply to the WTP Unit.

25 **III.10.C UNIT-SPECIFIC CONDITIONS FOR THE WTP UNIT**

26 **III.10.C.1 Reserved**

27 **III.10.C.2 General Waste Management**

28 **III.10.C.2.a** Treatment or storage of dangerous waste or mixed waste in any new or modified portion
29 of the facility may commence when the Permittees have submitted to Ecology, by
30 certified mail, or hand delivery, a letter signed by the Permittees and a Registered
31 Professional Engineer stating that the facility has been constructed or modified in
32 compliance with the Permit in accordance with [WAC 173-303-810](#)(14)(a); and

33 **III.10.C.2.a.i** The Permittee has received a Permit modification approval pursuant to Permit Conditions
34 [III.10.C.2.e](#) and III.10.C.2.f, or III.10.C.2.g, and

35 **III.10.C.2.a.ii** Ecology has inspected the modified or newly constructed facility and finds it is in
36 compliance with the conditions of the Permit, or

37 **III.10.C.2.a.iii** Within fifteen days, of the date of submission of the Permittees' letter, Ecology
38 has not notified the Permittees of intent to inspect.

39 **III.10.C.2.b** The Permittees are authorized to accept the dangerous and/or mixed waste specified in
40 Operating Unit Group 10, Addendum A (Part A Form 3), and Addendum B (WAP).

41 **III.10.C.2.c** All dangerous and/or mixed waste must be managed only in areas authorized for
42 dangerous and/or mixed waste management under the Permit Conditions, except as
43 allowed under [WAC 173-303-200](#). The authorized dangerous and/or mixed waste

- 1 management areas of the WTP Unit are specified in Conditions [III.10.D](#) through
2 [III.10.K.](#)
- 3 **III.10.C.2.d** Dangerous and/or mixed waste may be transferred from dangerous waste management
4 units within the WTP operating unit to an on-site dangerous waste management unit or an
5 off-site permitted TSD Facility using the manifest/tracking system required by permit
6 condition II.N.
- 7 **III.10.C.2.e** Permit modifications pursuant to this Permit for dangerous and/or mixed waste at the
8 request of the Permittees must be done according to the three tiered modification system
9 specified in [WAC 173-303-830](#)(4) and Condition I.C.3. The Permit modification request
10 must include page changes to the Permit, attachments, and permit application supporting
11 documentation necessary to incorporate the proposed permit modification.
- 12 **III.10.C.2.f** In addition to other requirements in [WAC 173-303-830](#), within forty-five (45) days of a
13 permit change (i.e., permit modification) being put into effect or approved, the Permittees
14 will provide copies of the Permit attachments to incorporate the change (if not already
15 reflected in the change pages submitted in the original permit modification request). This
16 submittal does not require re-certification in accordance with [WAC 173-303-810](#)(13).
- 17 **III.10.C.2.g** Permit modifications pursuant to Operating Unit Group 10, Appendix 1.0 will be
18 prepared and issued pursuant to [WAC 173-303-830](#)(3)(a)(ii) and [WAC 173-303-840](#).
- 19 **III.10.C.2.h** The Permittees must complete Compliance Schedule interim requirements as specified in
20 Operating Unit Group 10, Appendix 1.0. If an interim requirement is not completed as
21 specified, the Permittees will, within 14 days, notify Ecology in writing of its non-
22 compliance. The notification will include the following:
- 23 **III.10.C.2.h.i** A description of any portion of the interim requirement completed;
- 24 **III.10.C.2.h.ii** Summaries of any problems affecting timely completion of the interim
25 requirement;
- 26 **III.10.C.2.h.iii** A description of the plans for completing the remaining portion of the interim
27 requirement, including any alternatives;
- 28 **III.10.C.2.h.iv** Projected interim requirement completion date.
- 29 **III.10.C.2.i** RESERVED
- 30 **III.10.C.2.j** RESERVED
- 31 **III.10.C.2.k** RESERVED
- 32 **III.10.C.2.l** During demonstration testing of the LAW Vitrification System and HLW Vitrification
33 System, pursuant to Permit Sections [III.10.H.](#) and [J.](#), processing of materials in the LAW
34 and HLW Vitrification Systems that would designate as dangerous waste are fully subject
35 to the requirements of this Permit, excluding the melter feed system as identified in
36 Tables [III.10.H.A.](#) and [III.10.J.A.](#), respectively. This exclusion does not apply to mixed
37 waste.
- 38 **III.10.C.2.m** The Facility Owner will ensure WTP input is provided to the risk budget tool developed
39 in accordance with permit condition III.11.I.5
- 40 **III.10.C.2.n** The Permittees will submit the following reports, based on the August 2006 Mass
41 Balance submitted to Ecology (DOE Letter 06-ESQ-081), for Ecology's review and
42 comment/resolution. Updated information to the August 2006 Mass Balance may be
43 used if available and mutually agreed upon by the Permittees and Ecology. The reports
44 will describe all of the treatment approaches identified in Permit Conditions III.10.C.2.n.i
45 through III.10.C.2.n.v, and will be included in the administrative record.

- 1 **III.10.C.2.n.i** By June 30, 2010, the Permittees will perform an assessment that projects mixed
2 waste constituents and the concentrations that are expected to be contained in
3 each secondary mixed waste stream anticipated to be generated;
- 4 **III.10.C.2.n.ii** By June 30, 2010, the Permittees will identify appropriate Land Disposal
5 Restrictions (LDR) treatment standards for each mixed waste stream identified in
6 Permit Condition III.10.C.2.n.i;
- 7 **III.10.C.2.n.iii** By June 30, 2010, the Permittees will identify which mixed waste streams that,
8 from a qualitative risk perspective, reasonably may cause or may significantly
9 contribute to an exceedance of applicable environmental standards at a disposal
10 facility;
- 11 **III.10.C.2.n.iv** By June 30, 2010, the Permittees will, for the mixed waste streams identified in
12 Permit Condition III.10.C.2.n.iii, identify potential treatment approaches that
13 mitigate their environmental impacts; and
- 14 **III.10.C.2.n.v** By December 31, 2015 or 12 months prior to cold commissioning of the facility
15 producing the waste, whichever is earlier, the Permittees will, for the mixed
16 waste streams identified in Permit Condition III.10.C.2.n.iii, select appropriate
17 treatment approaches that mitigate their environmental impacts.
- 18 **III.10.C.2.o** The Facility owner will evaluate all waste streams generated at the WTP for potential
19 exceedances of applicable environmental standards and will ensure all mixed and
20 dangerous waste streams generated at the WTP will not cause an exceedance of
21 applicable environmental standards at an appropriate disposal facility on-site and is
22 subject to the following requirements:
- 23 **III.10.C.2.o.i** ILAW glass will be engineered to be compliant with the disposal facility Waste
24 Acceptance Criteria (WAC). The waste feed and ILAW glass recipes will be
25 verified to be compliant with the permitted glass formulations (including
26 planning for pertinent operating parameters) prior to vitrification.
- 27 **III.10.C.2.o.ii** Treatment methods for secondary waste streams projected to be generated by the
28 WTP that are slated for disposal at the Hanford Site will be engineered to ensure
29 that treated secondary wastes will comply with the on-site disposal facility WAC
30 and applicable LDRs prior to generation. Prior to treatment, secondary wastes
31 must be evaluated to ensure that selected treatment methods are still appropriate
32 and continue to comply with the on-site disposal facility WAC and applicable
33 LDRs; and
- 34 **III.10.C.2.o.iii** On a case-by-case basis, for any WTP mixed waste that does not meet the WAC
35 for the disposal facility, Ecology will approve or deny acceptance of that waste
36 into the disposal facility. This decision will be based on the disposal facility's
37 WAC and compliance with [WAC 173-303-140](#).
- 38 **III.10.C.3 Waste Analysis**
- 39 **III.10.C.3.a Reserved**
- 40 **III.10.C.3.b Reserved**
- 41 **III.10.C.3.c** The Permittees are responsible for obtaining accurate information for each waste stream.
42 Inaccurate waste analysis information provided by the generating site (or unit) is not a
43 defense for noncompliance by the Permittees with conditions of this Permit.
- 44 **III.10.C.3.d** Records and results of waste analyses conducted under the Waste Analysis Plan (WAP)
45 will be maintained in accordance with Permit Condition II.I.1. The WTP Unit operating
46 record will include, but not be limited to, information requirements for monitoring in
47 Permit Conditions I.F.1, I.F.2, and I.F.3.

- 1 **III.10.C.3.e** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
2 Permittees will submit to Ecology for review and approval a revised WAP and QAPP
3 pursuant to Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#), and the Compliance Schedule in
4 Operating Unit Group 10, Appendix 1.0. The revised WAP and QAPP will include:
- 5 **III.10.C.3.e.i** All the elements listed in WAC 173-303-300(5), and Permit Condition II.D.1.
- 6 **III.10.C.3.e.ii** Requirements that characterization will be performed on the waste feed prior to
7 transfer to the WTP Unit in conformance with the regulatory data quality
8 objectives identified in the Regulatory DQO Optimization Report (24590-WTP-
9 RPT-MGT-04-001, Rev 0), or any other parameters, and the rationale for
10 selecting these parameters. Requirements that the following analyses, at a
11 minimum, will be conducted on each new batch prior to waste transfer to the
12 WTP Unit, in accordance with the methods under [WAC 173-303-110](#): Ammonia,
13 pH, metals, organic acids, mercury, cyanide, volatiles, semi-volatiles,
14 PCBs/pesticides, anions, TOC, and compatibility (ASTM Method D5058-90).
15 For the purposes of this Permit Condition, a “new batch” is one that has been
16 sampled and analyzed in accordance with the Regulatory DQO Optimization
17 Report (24590-WTP-RPT-MGT-04-001, Rev 0), and has received no further
18 additions. Further additions require the Permittees to resample and reanalyze,
19 unless an exception is approved by Ecology on a case-by-case basis. Only mixed
20 waste meeting the definition of “new batch”, or granted an exception as
21 discussed above, are authorized for transfer to the WTP Unit. Water additions
22 for the purposes of waste transfer are not considered additions for the purposes of
23 this Permit Condition.
- 24 **III.10.C.3.e.iii** Identify and include operating parameters to be monitored/controlled and
25 limitations for these parameters for pre-process, in-process, and post-process
26 operations addressing on a unit specific basis treatment effectiveness, as
27 specified in Tables III.10.E.E through [H](#), [III.10.G.C](#), [III.10.H.C](#), [III.10.I.C](#),
28 [III.10.J.C](#), and [III.10.K.C](#), waste compatibility, safe operation, and compatibility
29 with unit materials of construction. Amend the sampling, analysis, and QA/QC
30 procedures to include these parameters and the monitoring frequency.
- 31 **III.10.C.3.e.iv** Requirements that the Permittees will, for Type I (primary) sumps if liquids are
32 detected, and for Type II (secondary) sumps, as defined in Operating Unit Group
33 10, Addendum C, if liquid levels are outside normal operating parameters, either
34 collect the liquid and return to the treatment process, or designate the sump
35 contents for proper management and disposal prior to removal.
- 36 **III.10.C.3.e.v** For ILAW containers and IHLW canisters, a description of the procedures used
37 for removal of mixed dangerous waste from exterior container surfaces,
38 including a description of how contamination removal, will be measured.
- 39 **III.10.C.3.e.vi** Requirement that wastes generated at the WTP Unit meet the receiving
40 authorized TSD facility waste acceptance criteria prior to a waste stream transfer.
- 41 **III.10.C.3.e.vii** The frequency with which analysis of each waste will be reviewed, or repeated,
42 to ensure that the analysis is accurate and current, including requirements and
43 criteria for reevaluation of the sampling and analysis frequency for all waste
44 streams.
- 45 **III.10.C.3.e.viii** Documentation demonstrating methods for obtaining samples of wastes are
46 representative as discussed in [WAC 173-303-110](#)(2).
- 47 **III.10.C.3.e.ix** Where applicable, the methods for meeting the additional waste analysis
48 requirements for specific waste management methods, as specified in [WAC 173-](#)
49 [303-140](#)(4), [173-303-395](#)(1), [WAC 173-303-630](#) through WAC [173-303-695](#).

- 1 **III.10.C.3.e.x** For waste transferred from other permitted TSDs, the procedures for confirming
2 that each dangerous waste received matches the identity of the waste specified on
3 the accompanying waste profile documentation. This includes the procedure for
4 identifying each waste movement at the Facility.
- 5 **III.10.C.4 Recordkeeping**
- 6 **III.10.C.4.a** The unit specific portion of the Hanford Facility Operating Record will include the
7 documentation specified in Permit Attachment 6, Permit Condition II.I, (applicable to
8 the WTP Unit), and other documentation specified in Operating Unit Group 10. Permit
9 Attachment 6 provides a list of required records, and the methods of submittal for the
10 facility and each unit group.
- 11 **III.10.C.5 Procedure to Prevent Hazards**
- 12 **III.10.C.5.a** The Permittees will design, construct, and operate the WTP Unit in compliance with
13 Operating Unit Group 10, Addendum E, Section 6.1.
- 14 **III.10.C.5.b** The WTP Unit fire protection systems will be constructed to the applicable codes listed in
15 Operating Unit Group 10, Addendum E, Section 6.3.1.4. Prior to the initial receipt of
16 dangerous and/or mixed waste in the WTP Unit, the Permittees will update Operating
17 Unit Group 10, Addendum E, Sections 6.3, 6.4, and 6.5 to be consistent with design
18 details, and resubmit for approval as a permit modification pursuant to Permit Conditions
19 [III.10.C.2.e](#) and [III.10.C.2.f](#), and Operating Unit Group 10, Appendix 1.0. In addition to
20 the stand-by diesel generator for the LAW and HLW melters, updated Section 6.4.4 will
21 include descriptions of the essential loads and critical systems supplied with back-up, un-
22 interruptible, and standby power.
- 23 **III.10.C.5.c** The Permittees will inspect the WTP Unit to prevent malfunctions and deterioration,
24 operator errors, and discharges that may cause or lead to the release of dangerous waste
25 constituents to the environment, or a threat to human health. Inspections must be
26 conducted in accordance with the WTP Unit Inspection Schedule, Operating Unit Group
27 10, Addendum E, Section 6.2, and Addendum E1. Prior to the receipt of dangerous
28 and/or mixed waste in the WTP Unit, the Permittees will update and resubmit to Ecology
29 for review and approval Addendum E, Section 6.2 and the Inspection Schedule in
30 Addendum E1 as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and
31 [III.10.C.2.f](#), and Compliance Schedule in Operating Unit Group 10, Appendix 1.0. The
32 revised schedule will include, but not be limited to the requirements in [WAC 173-303-](#)
33 [320](#)(2) and III.10.C.5.c.i through v below:
- 34 **III.10.C.5.c.i** Detailed dangerous and/or mixed waste management unit specific and general
35 inspection schedules and description of procedures pursuant to [WAC 173-303-](#)
36 [395](#)(1)(d), [WAC 173-303-630](#)(6), [WAC 173-303-640](#)(4)(a)(i) and (6), [WAC](#)
37 [173-303-670](#)(7)(b) in accordance with [WAC 173-303-680](#)(3), and [WAC 173-](#)
38 [303-695](#). The inspection schedule will be presented in the form of a table that
39 includes a description of the inspection requirement, inspection frequency, and
40 types of problems to look for during the inspections.
- 41 **III.10.C.5.c.ii** The proposed locations (scaled drawing with layout) and capabilities of
42 camera(s) (i.e., zoom angles, field of view, etc.) to be used for remote
43 inspections.
- 44 **III.10.C.5.c.iii** Schedule and program description for performing integrity assessments as
45 specified in Permit Conditions [III.10.E.9.e.i](#), [III.10.G.10.e.i](#), [III.10.H.5.e.i](#),
46 [III.10.I.1.a.v](#), [III.10.J.5.e.i](#), and [III.10.K.1.a.v](#).
- 47 **III.10.C.5.c.iv** Inspection schedules for leak detection system and control instrumentation to
48 include, but not limited to, valves pressure devices, flow devices, measuring

- 1 devices, as specified in Permit Conditions [III.10.E.9.e.xi](#), [III.10.F.3.c](#), and
2 [III.10.G.10.e.xii](#), and Permit Conditions [III.10.H.5.f.xvi](#), and [III.10.J.5.f.xvi](#).
- 3 **III.10.C.5.c.v** Inspection schedule will include inspections for all dangerous and/or mixed
4 waste management units specified in Permit Sections III.10.D, E, F, G, H, I, J,
5 and K.
- 6 **III.10.C.5.d** The Permittees will equip the WTP Unit with the equipment specified in Operating Unit
7 Group 10, Addendum E, as required by Permit Condition II.B.1.
- 8 **III.10.C.5.e** The Permittees will test and maintain the equipment specified in Operating Unit Group
9 10, Addendums E and E1, as necessary, to assure proper operation in the event of
10 emergency.
- 11 **III.10.C.5.f** The Permittees will maintain access to communications or alarms as provided in the
12 *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendum F1 and
13 Permit Condition II.B.2.
- 14 **III.10.C.6 Contingency Plan**
- 15 **III.10.C.6.a** The Permittees will immediately carry out applicable provisions of Permit Condition
16 II.A.1 and the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10,
17 Addendum F1 whenever there is a release of dangerous and/or mixed waste or dangerous
18 waste constituents, or other emergency circumstance, any of which threatens human
19 health or the environment.
- 20 **III.10.C.6.b** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
21 Permittees will update the Contingency Plan and the *RPP-WTP Emergency Response*
22 *Plan*, Operating Unit Group 10, Addendums F and F1, to be consistent with design
23 details and [WAC 173-303-350](#)(3), incorporated by reference, and resubmit as a permit
24 modification pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f, in compliance
25 with [WAC 173-303-350](#)(5)(c), and Operating Unit Group 10, Appendix 1.0.
- 26 **III.10.C.6.c** After initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
27 will review and amend, if necessary, the applicable portions of the Contingency Plan and
28 the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendums F and
29 F1 in accordance with the provision of [WAC 173-303-350](#)(5). The Addendums F and F1
30 will be amended as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and
31 III.10.C.2.f.
- 32 **III.10.C.6.d Reserved**
- 33 **III.10.C.6.e Reserved**
- 34 **III.10.C.7 Personnel Training**
- 35 **III.10.C.7.a** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
36 Permittees will update and resubmit, to Ecology for review and approval, the Training
37 Program description in Operating Unit Group 10, Addendum G as a permit modification
38 pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f, and Compliance Schedule in
39 Operating Unit Group 10, Appendix 1.0. The revised Training Program description will
40 include but not be limited to:
- 41 **III.10.C.7.a.i** Detailed unit specific and general Training Program descriptions) as required to
42 demonstrate compliance with [WAC 173-303-330](#) and to include:
- 43 **III.10.C.7.a.i.a** Job titles and descriptions for each dangerous waste management position (e.g. waste
44 designator, waste operator, laboratory technician, etc.);
- 45 **III.10.C.7.a.i.b** Outline of the training program updated to discuss initial, refresher, and on-the-job
46 training; correlated to each dangerous waste management position; and,

- 1 **III.10.C.7.a.i.c** Table G-1 in Operating Unit Group 10, Addendum G, updated to include the type
2 and amount of introductory, refresher, and on-the-job training required for each
3 dangerous waste management position [[WAC 173-303-806](#)(4)(a)(xii)].
- 4 **III.10.C.7.a.ii** Sufficient detail to document that the training and qualification program for all
5 categories of personnel whose activities may reasonably be expected to directly
6 affect emissions from the LAW and HLW Systems, except control room
7 operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(ii), and for
8 control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(i)
9 and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi) [[WAC 173-303-680](#)(2)].
- 10 **III.10.C.7.b** The Permittees will ensure that the LAW and HLW Systems are operated and
11 maintained, at all times, by persons who are trained and qualified to perform these and
12 any other duties that may reasonably be expected to directly affect emissions from the
13 LAW and HLW Systems [[WAC 173-303-680](#)(2)].
- 14 **III.10.C.7.c** The Permittees will conduct personnel training in accordance with the approved
15 description of the WTP Dangerous Waste Training Plan, Operating Unit Group 10,
16 Addendum G, pursuant to [WAC 173-303-330](#). The Permittees will maintain documents
17 in accordance with Permit Condition II.C.1 and [WAC 173-303-330](#)(2) and (3).
- 18 **III.10.C.7.d** **Reserved**
- 19 **III.10.C.7.e** The Permittees will submit, under separate cover, the actual detailed WTP Dangerous
20 Waste Training Plan in accordance with the Compliance Schedule in Operating Unit
21 Group 10, Appendix 1.0. The WTP Dangerous Waste Training Plan will be reviewed for
22 compliance with the outline of the training program in Operating Unit Group 10,
23 Addendum G and requirements of [WAC 173-303-330](#). The Training Plan will be
24 incorporated into the Administrative Record.
- 25 **III.10.C.8** **Closure**
- 26 **III.10.C.8.a** The Permittees must conduct closure of the WTP Unit according to the Closure Plan in
27 Operating Unit Group 10, Addendum H, and Permit Condition III.10.C.8. The closure
28 plan will be modified according to provisions of Permit Condition I.C.1.
- 29 **III.10.C.8.b** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
30 will update and resubmit the Closure Plan, Operating Unit Group 10, Addendum H for
31 approval as a permit modification pursuant to Permit Condition III.10.C.2.g., to be
32 consistent with design details and schedule described in Operating Unit Group 10,
33 Appendix 1.0. The updated Closure Plan must be consistent with the closure
34 performance standards specified in [WAC 173-303-610](#)(2)(a)-(b), [WAC 173-340](#) and, in
35 addition for Containment Buildings, consistent with 40 CFR 264.1102(b) as referenced
36 by [WAC 173-303-695](#).
- 37 **III.10.C.8.c** The Permittees will submit, for Ecology review and approval, an update to the Closure
38 Plan, Operating Unit Group 10, Addendum H, including all documentation required by
39 Permit Condition II.D, within one hundred eighty (180) days prior to commencing partial
40 closure, as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and
41 [III.10.C.2.f](#).
- 42 **III.10.C.8.d** One hundred eighty (180) days prior to commencing final closure of Operating Unit
43 Group 10, the Permittees must submit to Ecology, for review and approval, a revised
44 Closure Plan, including all documentation required by Permit Condition II.D, as a permit
45 modification pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#).
- 46 **III.10.C.8.e** **Reserved**

- 1 **III.10.C.8.f** To achieve clean closure, the Permittees will remove dangerous waste, dangerous waste
2 constituents, and dangerous waste residues throughout the closing unit and throughout
3 any areas affected by releases from the closing unit to concentrations that do not exceed
4 numeric cleanup levels determined using residential exposure assumptions according to
5 the Model Toxics Control Act (MTCA) Regulations, [Chapter 173-340 WAC](#) and all
6 structures, equipment, bases, liners, and other materials containing or contaminated with
7 dangerous waste, constituents, or residues have met specific waste removal and
8 decontamination standards approved by Ecology, in accordance with [WAC 173-303-
9 610\(2\)\(b\)\(i\)-\(ii\)](#).
- 10 **III.10.C.8.g** **Reserved**
- 11 **III.10.C.8.h** Documentation supporting the independent registered professional engineer's
12 certification of closure must be submitted to Ecology with the closure certification
13 required by [WAC 173-303-610\(6\)](#). In addition to the items in Operating Unit Group 10,
14 Addendum H, the documentation must include the following and other information
15 Ecology may request.
- 16 **III.10.C.8.h.i** Sampling procedures that were followed;
- 17 **III.10.C.8.h.ii** Soil and concrete locations that were sampled;
- 18 **III.10.C.8.h.iii** Sample labeling and handling procedures that were followed, including chain of
19 custody procedures; and,
- 20 **III.10.C.8.h.iv** Description of procedures that were followed to decontaminate concrete or metal
21 to meet the clean closure standards approved by Ecology, in accordance with the
22 closure performance standards of [WAC 173-303-610\(2\)\(a\)\(ii\)](#) and in a manner
23 that minimizes or eliminates post-closure escape of dangerous waste constituents,
24 or to achieve a "clean debris surface" as specified in 40 CFR 268.45, Table 1,
25 concrete surfaces, as incorporated by reference in [WAC 173-303-140](#). [[WAC
26 173-303-610\(2\)\(b\)\(ii\)](#)].
- 27 **III.10.C.8.h.v** **Laboratory and field data, including supporting QA/QC summary;**
- 28 **III.10.C.8.h.vi** Report that summarizes closure activities;
- 29 **III.10.C.8.h.vii** Copy of all field notes taken by the independent registered professional engineer;
30 and,
- 31 **III.10.C.8.h.viii** Copy of all contamination survey results.
- 32 **III.10.C.9** **Critical Systems**
- 33 **III.10.C.9.a** The WTP Unit critical systems, as defined in the definition section of Operating Unit 10
34 and are identified in Operating Unit Group 10, Appendix 2.0.
- 35 **III.10.C.9.b** As the design proceeds, Ecology will modify this Permit for reasons described in the
36 [WAC 173-303-830\(3\)](#) to add additional systems to the Critical Systems in Operating Unit
37 Group 10, Appendix 2.0.
- 38 **III.10.C.9.c** The Permittees will conduct all construction subject to this Permit in accordance with the
39 approved designs, plans, and specifications that are required by this Permit, except as
40 specified in Conditions III.10.C.9.d or III.10.C.9.e. For purposes of Conditions
41 III.10.C.9.d and III.10.C.9.e, the Ecology representative will be an Ecology construction
42 inspector, project manager, or other designated representative of Ecology.
- 43 **III.10.C.9.d** The Permittees will submit a nonconformance report (NCR) or construction deficiency
44 report (CDR) to the Ecology representative(s), as applicable, within seven (7) calendar
45 days of the Permittees becoming aware of incorporation of minor nonconformance or
46 construction deficiency from the approved designs, plans, and specifications into the

1 construction of critical systems, as defined in the Hanford Site-wide Permit definition
2 section. Such minor nonconformance or construction deficiency will be defined, for the
3 purposes of this Permit Condition, as nonconformance or construction deficiency that is
4 necessary to accommodate proper construction and the substitution or the use of
5 equivalent or superior materials or equipment that do not substantially alter the Permit
6 conditions or reduce the capacity of the facility to protect human health or the
7 environment. Such minor nonconformance or construction deficiency will not be
8 considered a modification of this Permit. If Ecology determines that the nonconformance
9 or construction deficiency is not minor, it will notify the Permittees in writing that a
10 permit modification is required for the deviation and whether prior approval is required
11 from Ecology before work proceeds which affect the nonconforming or construction
12 deficiency item.

13 **III.10.C.9.e** The Permittees will formally document, with a NCR or CDR, as applicable, incorporation
14 of minor nonconformance or construction deficiency from the approved designs, plans,
15 and specifications into the construction of non-critical systems subject to this Permit.
16 Such minor nonconformance or construction deficiency will not be considered a
17 modification of this Permit. All NCR's and CDR's will be maintained in the WTP Unit
18 Operating Record and will be made available to Ecology upon request or during the
19 course of an inspection. If Ecology determines that the nonconformance or construction
20 deficiency is not minor, it will notify the Permittees in writing that a permit modification
21 is required for the deviation and whether prior approval is required from Ecology before
22 work proceeds which affect the nonconforming or construction deficiency item.

23 **III.10.C.9.f** For each Critical System identified in Operating Unit Group 10, Appendix 2.0, the
24 Permittees will submit to Ecology for review and approval, following the schedule in
25 Operating Unit Group 10, Appendix 1.0, the information identified in Permit Conditions
26 III.10.C.16, III.10.D.10, III.10.E.9, III.10.F.7, III.10.G.10, III.10.H.5, and III.10.J.5.
27 Information Ecology determines to incorporate into the Permit will follow the Permit
28 Condition III.10.C.2.g process, unless stated otherwise within the specific permit
29 condition. Information Ecology determines necessary to support design basis will be
30 incorporated into the Administrative Record.

31 **III.10.C.9.g** Upon completion of the WTP Unit construction subject to this Permit, the Permittees
32 will produce as-built drawings of the project which incorporate the design and
33 construction modifications resulting from all change documentation as well as
34 modifications made pursuant to Permit Conditions [III.10.C.2.e](#), III.10.C.2.f, and
35 III.10.C.2.g. The Permittees will place the as-built drawings into the operating record
36 within twelve (12) months of completing construction.

37 **III.10.C.9.h** The Permittees will formally document changes to approved designs, plans, and
38 specifications with design change documentation [e.g., Design Change Notice (DCN),
39 Field Change Request (FCR), Field Change Notice (FCN), Specification Change Notice
40 (SCN), and Supplier Deviation Disposition Request (SDDR)]. All design change
41 documentation will be maintained in the WTP Unit-specific Operating Record and will
42 be made available to Ecology upon request or during the course of an inspection. For any
43 design change documentation affecting any critical systems, the Permittees will provide
44 copies to Ecology within five (5) working days. Identification of critical systems will be
45 included by the Permittees in each WTP Unit-specific dangerous waste permit
46 application, closure plan, or permit modification, as appropriate. If Ecology determines
47 that the design change is not minor, it will notify the Permittees in writing that a permit
48 modification is required for the design change and whether prior approval is required
49 from Ecology before work affected by the design change may proceed.

50 **III.10.C.9.i** Ventilation system duct work is not required to be doubly contained within the WTP
51 Unit. However, upon discovery of accumulation of liquids within the duct work, a

1 compliance plan will be submitted within sixty (60) days of discovery to correct the
2 problem.

3 **III.10.C.10 Equivalent Materials**

4 **III.10.C.10.a** If certain equipment, materials, and administrative information (such as names, phone
5 numbers, addresses, formatting) are specified in this Permit, the Permittees may use
6 equivalent or superior substitutes. Use of such equivalent or superior items within the
7 limits (e.g., ranges, tolerances, and alternatives) already clearly specified in sufficient
8 detail in Operating Unit Group 10, are not considered a Permit modification. However,
9 the Permittees must place documentation of the substitution, accompanied by a narrative
10 explanation and the date the substitution became effective in the operating record within
11 seven (7) days of putting the substitution into effect, and submit documentation of the
12 substitution to Ecology, for approval. Upon review of the documentation of the
13 substitution, if deemed necessary, Ecology may require the Permittees to submit a permit
14 modification in accordance with Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.

15 **III.10.C.10.b** If Ecology determines that a substitution was not equivalent to the original, they will
16 notify the Permittees that the Permittees' claim of equivalency has been denied, of the
17 reasons for the denial, and that the original material or equipment must be used. If the
18 product substitution is denied, the Permittees will comply with the original approved
19 product specification, find an acceptable substitution, or apply for a permit modification
20 in accordance with Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.

21 **III.10.C.11 Risk Assessment**

22 **III.10.C.11.a** The Permittees will submit a permit modification pursuant to Permit Conditions
23 III.10.C.2.e and III.10.C.2.f, in accordance with Operating Unit Group 10, Appendix 1.0,
24 to Ecology to incorporate revisions to the "Environmental Risk Assessment Work Plan,
25 Appendix 6.1". The revised document will be submitted for incorporation into Appendix
26 6.2 as the Final Risk Assessment Workplan. The Permittee will make revisions in
27 consultation with Ecology to address the comments documented in Operating Unit Group
28 10, Appendix 6.1 and updated to address the following:

29 **III.10.C.11.a.i** EPA guidance for performance of Human Health and Ecological Risk
30 Assessments for Hazardous Waste Combustion Facilities current at the time of
31 the submittal, assuming both residential and non-residential use scenarios;

32 **III.10.C.11.a.ii** Toxicity data current at the time of the submittal;

33 **III.10.C.11.a.iii** Compounds newly identified or updated emissions data from current waste
34 characterization and emission testing;

35 **III.10.C.11.a.iv** Air modeling updated to include stack gas parameters based on most current
36 emissions testing and WTP Unit design;

37 **III.10.C.11.a.v** Physical/transport properties of constituents, current at the time of the submittal;

38 **III.10.C.11.a.vi** Process description based on most current WTP Unit design;

39 **III.10.C.11.a.vii** Emissions data and all supporting calculations based on most current WTP Unit;
40 and,

41 **III.10.C.11.a.viii** Update of receptor locations based on land use or land use zoning changes, if
42 any.

43 **III.10.C.11.b** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
44 will submit for Ecology review and approval as a permit modification pursuant to Permit
45 Conditions [III.10.C.2.e](#) and III.10.C.2.f, a Pre-Demonstration Test Risk Assessment

1 Report as Appendix 6.3. The Pre-Demonstration Test Risk Assessment Report will
2 address and include the following:

- 3 **III.10.C.11.b.i** Direct and indirect human health and ecological risk assessments performed
4 pursuant to the Final Risk Assessment Work Plan in Permit Condition
5 III.10.C.11.a;
- 6 **III.10.C.11.b.ii** Submittal of projected stack emissions data for Tables [III.10.G.D.](#), [III.10.H.E.](#),
7 and [III.10.J.E.](#); and,
- 8 **III.10.C.11.b.iii** Submittal of the Basis and Assumptions (for incorporation into Appendix 6.3.1)
9 for these emissions, including but not limited to, projected operating conditions,
10 feed-rates, and treatment effectiveness, consistent with information provided and
11 approved pursuant to Permit Conditions [III.10.G.6](#), [III.10.G.10](#), III.10.H.1,
12 III.10.H.5, III.10.J.1, and III.10.J.5.
- 13 **III.10.C.11.c** Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted
14 pursuant to Permit Condition III.10.H.3.d.i, the Permittees will submit a Final Risk
15 Assessment Report as Operating Unit Group 10, Appendix 6.4, incorporating the
16 emission test results from the Demonstration Report(s). The Final Risk Assessment
17 Report will be prepared in accordance with the Final Risk Assessment Work Plan in
18 Appendix 6.2, (as approved pursuant to Permit Condition III.10.C.11.a), except the
19 following updates are hereby incorporated. The Permittees will also submit with this
20 Final Risk Assessment Report, Permit Tables [III.10.G.D](#) and [III.10.I.E](#) and Operating
21 Unit Group 10, Appendix 6.4.1 (Basis and Assumptions) updated to incorporate the
22 emissions data from this Final Risk Assessment Report(s), as a permit modification
23 pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.
- 24 **III.10.C.11.c.i** Toxicity data current at the time of the submittal;
- 25 **III.10.C.11.c.ii** Compounds newly identified or updated emissions data from current waste
26 characterization and emission testing;
- 27 **III.10.C.11.c.iii** Air modeling updated to include stack gas parameters based on most current
28 emissions testing;
- 29 **III.10.C.11.c.iv** Physical/transport properties of constituents current at the time of the submittal;
- 30 **III.10.C.11.c.v** Update of receptor locations based on land use or land use zoning changes, if
31 any;
- 32 **III.10.C.11.c.vi** Process description based on current WTP Unit design;
- 33 **III.10.C.11.c.vii** Emissions data and all supporting calculations based on current WTP Unit; and,
- 34 **III.10.C.11.c.viii** Data from final risk assessment report pursuant to Permit Condition
35 III.10.C.11.d, if available first, or simultaneously.
- 36 **III.10.C.11.d** Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted
37 pursuant to Permit Condition III.10.J.3.d.i, the Permittees will submit a Final Risk
38 Assessment Report as Operating Unit Group 10, Appendix 6.4, incorporating the
39 emission test results from the Demonstration Report(s). The Final Risk Assessment
40 Report will be prepared in accordance with the Final Risk Assessment Work Plan in
41 Appendix 6.2, (as approved by Ecology pursuant to Permit Condition III.10.C.11.a),
42 except the following updates are hereby incorporated. The Permittees will also submit
43 with this Final Risk Assessment Report, Permit Tables [III.10.G.D](#) and [III.10.K.E](#) and
44 Operating Unit Group 10, Appendix 6.4.1 (Basis and Assumptions) updated to
45 incorporate the emissions data from this Final Risk Assessment Report, as a permit
46 modification pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.

- 1 **III.10.C.11.d.i** Toxicity data current at the time of the submittal;
- 2 **III.10.C.11.d.ii** Compounds newly identified or updated emissions data from current waste
3 characterization and emission testing;
- 4 **III.10.C.11.d.iii** Air modeling updated to include stack gas parameters based on most current
5 emissions testing;
- 6 **III.10.C.11.d.iv** Physical/transport properties of constituents current at the time of the submittal;
- 7 **III.10.C.11.d.v** Update of receptor locations based on land use or land use zoning changes, if
8 any;
- 9 **III.10.C.11.d.vi** Process description based on current WTP Unit design;
- 10 **III.10.C.11.d.vii** Emissions data and all supporting calculations based on current WTP Unit; and,
- 11 **III.10.C.11.d.viii** Data from final risk assessment report pursuant to Permit Condition
12 III.10.C.11.c, if available first, or simultaneously.
- 13 **III.10.C.11.e** The Final Risk Assessment Report(s) required by Permit Conditions III.10.C.11.c and
14 III.10.C.11.d may be combined, or provided separately, as appropriate.
- 15 **III.10.C.12 Reserved**
- 16 **III.10.C.13 Remote Data Access**
- 17 Onsite, unrestricted, twenty-four (24) hour access to key WTP Unit operating data and
18 emissions monitoring data will be provided to Ecology. This onsite, unrestricted access
19 will include providing and maintaining for Ecology only use a computer terminal and
20 printer with access to key WTP Unit operating data bases and emissions monitoring
21 databases. This terminal will be equipped with all necessary software and hardware to
22 monitor, retrieve, and trend this data. Additional remote access will be provided on
23 Ecology request if security concerns can be addressed.
- 24 **III.10.C.14 Interim Period of Operation during Post Demonstration Test Period** prior to receiving
25 Ecology approval of the complete Demonstration Test Reports and the Final Risk
26 Assessment Report.
- 27 **III.10.C.14.a** During this Interim Period of Operation, the Permittees are authorized to treat dangerous
28 waste and mixed waste feed meeting the waste acceptance criteria of the Waste Analysis
29 Plan in Addendum B, subject to the following conditions:
- 30 **III.10.C.14.a.i** Obtain receipt of Ecology's approval for the LAW Vitrification System
31 according to Permit condition III.10.H.3.d.iii, prior to receiving dangerous or
32 mixed waste feed into the LAW Vitrification System;
- 33 **III.10.C.14.a.ii** Obtain receipt of Ecology's approval for the HLW Vitrification System
34 according to Permit condition III.10.J.3.d.iii, prior to receiving dangerous or
35 mixed waste feed into the HLW Vitrification System; and,
- 36 **III.10.C.14.a.iii** Accept and treat up to 3 million gallons of Hanford tank waste feed in WTP.
- 37 **III.10.C.15 Support Systems**
- 38 **III.10.C.15.a Mechanical Handling Systems**
- 39 **III.10.C.15.a.i** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f,
40 in accordance with the Compliance Schedule, as specified in Operating Unit
41 Group 10, Appendix 1.0, engineering information as specified below, for
42 incorporation into Appendices 9.6, 9.10, 10.6, and 10.10, or into the
43 Administrative Record where noted.

- 1 A. System Descriptions for each Mechanical Handling system identified in
2 Permit Table [III.10.C.A](#), for incorporation into the Administrative Record
3 (Compliance Schedule Item 36).
- 4 B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the
5 following pieces of equipment (Compliance Schedule Item 37):
- 6 a. HDH-CRN-00005
 - 7 b. HEH-CRN-00003
 - 8 c. HPH-CRN-00001
 - 9 d. HPH-CRN-00002
 - 10 e. HSH-CRN-00001
 - 11 f. HSH-CRN-00014
 - 12 g. LEH-CRN-00003
 - 13 h. LPH-CRN-00002
 - 14 i. HEH-CRN-00001
- 15 C. Permit condition III.10.C.15.a does not require:
- 16 a. Additional submittals beyond those described in permit condition
17 III.10.C.15.a;
 - 18 b. IQRPE reports for equipment identified in III.10.C.15.a.i(B);
 - 19 c. Installation inspections for equipment identified in III.10.C.15.a.i(B); and
 - 20 d. Other inspection, verification, operability, maintenance, or records
21 management beyond that which is specified elsewhere in this permit, for
22 equipment identified in III.10.C.15.a.i (B), or by conditions III.10.C.15.a.ii
23 and III.10.C.15.a.iii.

24 **III.10.C.15.a.ii**

The Permittees will submit to Ecology, pursuant to Permit Condition
25 III.10.C.9.f., prior to initial receipt of dangerous waste and/or mixed waste in the
26 WTP Unit, engineering information as identified below for incorporation into
27 Appendices 9.13, 9.18, 10.13, and 10.18:

- 28 A. Equipment instrument logic narrative description related to safe operation of
29 equipment covered by III.10.C.15.a.i.B, including but not limited to allowed
30 travel path for bridge and trolley, upper and lower hook travel limits, two-
31 blocking prevention, hook load limits, wire rope misreeling, and overspeed
32 protection (Compliance Schedule Item 38); and,
- 33 B. Descriptions of operational procedures demonstrating appropriate controls and
34 practices are in place to ensure equipment covered by III.10.C.15.a.i.B will be
35 operated in a safe and reliable manner that will not result in damage to regulated
36 tank systems, miscellaneous unit systems, or canisters of vitrified waste
37 (Compliance Schedule Item 39).

38 **III.10.C.15.a.iii**

Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the
39 Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the
40 following for incorporation into Addendum C: Updated narrative description and
41 figures for all Mechanical Handling Systems identified in Permit Table
42 [III.10.C.A](#), to include but not limited to travel path, fail safe conditions, fail safe
43 logic control, safety features and controls that minimize the potential for release
44 of dangerous/mixed waste during normal operations, and lifting and/or load
45 capabilities of each crane specified in III.10.C.15.a.i.B.

Table III.10.C.A – Mechanical Handling Systems

Pretreatment Building		
	Pretreatment Filter Cave Handling System	PFH
	Pretreatment In-Cell Handling System	PIH
	Radioactive Solid Waste Handling System	RWH
Low-Activity Waste Building		
	Radioactive Solid Waste Handling System	RWH
	LAW Melter Equipment Support Handling System	LSH
	LAW Container Pour Handling System	LPH
	LAW Container Finishing Handling System	LFH
	LAW Melter Handling System	LMH
	LAW Canister Export Handling System	LEH
High-Level Waste Building		
	HLW Melter Cave Support Handling System	HSH
	HLW Canister Export Handling System	HEH
	HLW Filter Cave Handling System	HFH
	HLW Canister Pour Handling System	HPH
	HLW Canister Decontamination Handling System	HDH
	HLW Melter Handling System	HMH
	Radioactive Solid Waste Handling System	RWH

1
2
3

- 1 **III.10.D CONTAINERS**
- 2 **III.10.D.1 Container Storage Areas and Storage Limits**
- 3 **III.10.D.1.a** The Permittees may store dangerous and/or mixed waste meeting the waste acceptance
4 criteria for containerized waste in the WAP, Operating Unit Group 10, Addendum B, (as
5 approved pursuant to Permit Conditions III.10.C.3. and III.10.C.2), for storage in
6 dangerous and/or mixed waste container storage units identified in Tables III.10.D.A
7 through III.10.D.C.
- 8 **III.10.D.1.b** The Permittees may store containerized dangerous and mixed waste only in container
9 storage areas listed in Permit Tables III.10.D.A (as approved/modified pursuant to Permit
10 Condition III.10.D.10), in accordance with Permit Section III.10.D, and in accordance
11 with Operating Unit Group 10, Chapters 1.0 and 4.0, and Appendices 9.4, 9.5, 9.7, 9.8,
12 9.9, 9.18, 10.4, 10.5, 10.7, 10.8, 10.9, 10.18, 12.4, 12.5, 12.7, 12.8, 12.9, and 12.15, as
13 approved pursuant to Permit Conditions III.10.D.10.b through d. The Permittees will
14 limit the total volume of waste to quantities specified for the individual container storage
15 areas listed in Permit Table III.10.D.A.
- 16 **III.10.D.1.c** The Permittees must maintain a free volume (i.e., free volume = total capacity of
17 containment system minus volume occupied by equipment and containers within
18 containment systems) within containment systems identified in Permit Tables [III.10.D.B](#)
19 and [III.10.D.C](#) (as approved/modified pursuant to Permit Condition III.10.D.10), equal to
20 ten percent (10%) of the total volume of dangerous and mixed waste stored within the
21 containment system, or the volume of the largest container stored within the containment
22 system, whichever is greater.
- 23 **III.10.D.1.d** The Permittees will maintain documentation in the operating record for each container
24 storage area listed in Permit Table III.10.D.A (as approved/modified pursuant to Permit
25 Condition III.10.D.10), in accordance with [WAC 173-303-380](#).
- 26 **III.10.D.1.e** For the purpose of determining compliance with container storage area capacity limits
27 and containment system requirements, every waste container will be considered to be
28 full.
- 29 **III.10.D.1.f Reserved**
- 30 **III.10.D.2 Container Storage Areas Design and Construction**
- 31 **III.10.D.2.a** The Permittees will construct container storage areas identified in Permit Tables
32 III.10.D.A through III.10.D.C, as specified in all applicable drawings and specifications
33 in Operating Unit Group 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8,
34 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9, as approved pursuant to Permit Condition
35 III.10.D.10.b.
- 36 **III.10.D.2.b Reserved**
- 37 **III.10.D.2.c** All container storage areas identified in Permit Tables III.10.D.A through [III.10.D.C](#) (as
38 approved/modified pursuant to Permit Condition III.10.D.10), must be constructed to
39 protect containers from contact with accumulated liquids (e.g., leaks, spills, precipitation,
40 fire water, liquids from damaged or broken pipes) [[WAC 173-303-630](#)(7)(a)(i) and [WAC](#)
41 [173-303-630](#)(7)(c)(ii)].
- 42 **III.10.D.2.d** Modifications to approved design, plans, and specifications for the container storage
43 areas identified in Permit Tables III.10.D.A through III.10.D.C must be made in
44 accordance with Permit Conditions III.10.C.2.e, f., and g, or III.10.C.9.d, e., and h.
- 45 **III.10.D.3 Container Storage Area Installation**
- 46 **III.10.D.3.a Reserved**

- 1 **III.10.D.3.b** The Permittees will obtain and place in the WTP Unit operating record, within thirty (30)
2 days of completion of each container storage area identified in Permit Tables III.10.D.A,
3 through III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.),
4 written statements by a qualified, installation inspector or a qualified registered,
5 professional engineer, attesting that these areas were installed in compliance with [WAC](#)
6 [173-303-630\(7\)\(a\)](#), (b), and (c) [[WAC 173-303-630\(7\)](#), [WAC 173-303-806\(4\)\(b\)\(i\)](#)].
- 7 **III.10.D.4 Container Management Practices**
- 8 **III.10.D.4.a Reserved**
- 9 **III.10.D.4.b** The Permittees will manage all waste in container storage areas identified in Permit
10 Tables III.10.D.A through [III.10.D.C](#) (as approved/modified pursuant to Permit
11 Condition III.10.D.10), in accordance with procedures described in Operating Unit Group
12 10, Addendum C, Appendices 9.18, 10.18, and 12.15, as approved pursuant to Permit
13 Condition III.10.D.10.c, and the following conditions:
- 14 **III.10.D.4.b.i** The operating records and waste tracking procedures will indicate all times at
15 which containerized dangerous and mixed waste were removed from and
16 returned to designated staging, storage, segregation, and treatment areas as
17 approved pursuant to Permit Condition III.10.D.10.c.vi. [[WAC 173-303-380](#)].
- 18 **III.10.D.4.b.ii** The physical arrangement (i.e., spacing) of dangerous and mixed waste
19 containers will be as specified in [WAC 173-303-630\(5\)\(c\)](#), except for the
20 immobilized LAW containers and IHLW waste canisters, which must be as
21 described in Operating Unit Group 10, Addendum C, Section 4.2.1.2.1., as
22 updated pursuant to Permit Condition III.10.D.10.c.i.
- 23 **III.10.D.4.b.iii** All container storage areas must be operated to protect containers from contact
24 with accumulated liquids resulting from leaks, spills, or precipitation [[WAC 173-](#)
25 [303-630\(7\)\(a\)\(i\)](#) and (c)(ii)].
- 26 **III.10.D.4.b.iv** At all times, the Permittees will place and store ignitable and/or reactive
27 dangerous and/or mixed waste in accordance with the procedures described in
28 Operating Unit Group 10, Appendix 8.15, 9.18, 10.18, 11.15 and 12.15, as
29 approved pursuant to Permit Condition III.10.D.10.c.xi;
- 30 **III.10.D.4.b.v** At all times, the Permittees will place and store incompatible dangerous and/or
31 mixed waste in accordance with the procedures described in Operating Unit
32 Group 10, Appendix 8.15, 9.18, 10.18, 11.15, and 12.15, as approved pursuant to
33 Permit Condition III.10.D.10.c.xii;
- 34 **III.10.D.4.b.vi** At all times, storage containers holding dangerous and/or mixed waste that
35 contain free liquids and/or exhibit either the characteristic of ignitability or
36 reactivity as described in [WAC 173-303-090\(5\)](#) or (7), must be provided with a
37 containment system in accordance with [WAC 173-303-630\(7\)\(a\)\(i\)](#) through (iii)
38 [[WAC 173-303-630\(7\)\(c\)](#)].
- 39 **III.10.D.4.b.vii** At all times, containers holding dangerous and/or mixed waste in container
40 storage areas must be closed, except when it is necessary to add or remove waste
41 [[WAC 173-303-630\(5\)\(a\)](#)].
- 42 **III.10.D.4.b.viii** At all times, containers holding dangerous and/or mixed waste must not be
43 opened, handled, or stored in a manner which may rupture the container or cause
44 it to leak [[WAC 173-303-630\(5\)\(b\)](#)].
- 45 **III.10.D.4.b.ix** A storage container holding a dangerous and/or mixed waste that is incompatible,
46 as defined in [WAC 173-303-040](#), with any waste or other materials stored nearby
47 in other containers, piles, open tanks, or surface impoundments must be separated

- 1 from the other waste or materials or protected from them by means of a dike,
2 berm, or wall. [[WAC 173-303-630](#)(9)(c);]
- 3 **III.10.D.4.b.x** If a container holding dangerous and/or mixed waste is not in good condition
4 (e.g., exhibits severe rusting, apparent structural defects, or any other condition
5 that could lead to container rupture or leakage) or is leaking, the Permittees will
6 manage the container in accordance with procedures described in Operating Unit
7 Group 10, Appendices 8.15, 9.18, 10.18, 11.15, and 12.15, as approved pursuant
8 to Permit Condition III.10.D.10.c.viii [[WAC 173-303-630](#)(2)];
- 9 **III.10.D.4.b.xi** Reserved;
- 10 **III.10.D.4.b.xii** The Permittees will ensure that all containers used for dangerous and/or mixed
11 waste management, are made of or lined with materials which will not react with
12 and are otherwise compatible with the waste to be stored [[WAC 173-303-](#)
13 [630](#)(4)];
- 14 **III.10.D.4.b.xiii** Except for lab packs assembled in compliance with [WAC 173-303-161](#)
15 requirements, the Permittees will not place incompatible wastes, or incompatible
16 wastes and materials, in the same container, unless [WAC 173-303-395](#)(1)(b) is
17 complied with [[WAC 173-303-630](#)(9)(a)]; and,
- 18 **III.10.D.4.b.xiv** The Permittees will not place dangerous and/or mixed waste in an unwashed
19 container that previously held an incompatible waste or material [[WAC 173-303-](#)
20 [630](#)(9)(b)].
- 21 **III.10.D.5 Identification of Containers and Container Storage Areas**
- 22 **III.10.D.5.a** Pursuant to [WAC 173-303-630](#)(3), the Permittees will ensure that all dangerous and/or
23 mixed waste containers (except as otherwise specified in Operating Unit Group 10,
24 Addendum C, Section 4.2.1.3., as updated pursuant to Permit Condition III.10.D.10.c.i,
25 for containers of ILAW and IHLW) are labeled in a manner that adequately identifies the
26 major risk(s) associated with the contents. For purposes of container labeling, major
27 risk(s) could include but are not limited to the following:
- 28 **III.10.D.5.a.i** PERSISTENT (if a WP01 or WP02 waste code);
- 29 **III.10.D.5.a.ii** TOXIC (if a WT01, WT02, or D waste code other than D001, D002, or D003);
- 30 **III.10.D.5.a.iii** IGNITABILITY (if a D001 and other waste codes);
- 31 **III.10.D.5.a.iv** CORROSIVE (if a D002 and other waste codes); and;
- 32 **III.10.D.5.a.v** REACTIVE (if a D003 and other waste codes).
- 33 **III.10.D.5.b** For all dangerous and mixed waste containers (except as otherwise specified in Operating
34 Unit Group 10, Addendum C, Section 4.2.1.3., as updated pursuant to Permit Condition
35 III.10.D.10.c.i, for containers of ILAW and canisters of IHLW), the Permittees will
36 ensure that:
- 37 **III.10.D.5.b.i** Labels are not obscured or otherwise unreadable;
- 38 **III.10.D.5.b.ii** Waste containers are oriented so as to allow inspection of the labels identified in
39 Permit Conditions III.10.D.5.a and III.10.D.5.b, the container tracking number,
40 and, to the extent possible, any labels which the generator placed upon the
41 container; and,
- 42 **III.10.D.5.b.iii** Empty dangerous and mixed waste containers, as defined by [WAC 173-303-](#)
43 [160](#)(2), must have their dangerous and/or mixed waste labels destroyed or
44 otherwise removed immediately upon being rendered empty.

- 1 **III.10.D.5.c** The Permittees will post entrances and access points to all ILAW containers and IHLW
2 canister storage areas, and any other areas where containers of ILAW and IHLW are
3 handled, with signs that, in addition to meeting the requirements of [WAC 173-303-](#)
4 [310\(2\)\(a\)](#), clearly identify the major risk(s) associated with the containers of ILAW and
5 IHLW.
- 6 **III.10.D.6 Containment Systems**
- 7 **III.10.D.6.a** Containerized dangerous and mixed waste, and other materials that are incompatible, will
8 not be staged, segregated, or stored within the same containment system as identified in
9 Permit Table [III.10.D.C](#), as approved/modified pursuant to Permit Condition III.10.D.10
10 (e.g., metal pan, concrete berm, portable containment system) [[WAC 173-303-630\(9\)\(c\)](#)].
- 11 **III.10.D.6.b** The integrity of containment systems identified in Permit Table [III.10.D.C](#). (as
12 approved/modified pursuant to Permit Condition III.10.D.10) must be maintained so that
13 cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of containment pads,
14 joints in containment pads, berms, curbs, trenches, sumps, and coatings are repaired in
15 accordance with Operating Unit Group 10, Addendum E, as approved/modified pursuant
16 to Permit Conditions III.10.D.10.c.vii, III.10.C.5.b, and III.10.C.5.c [[WAC 173-303-320](#),
17 [WAC 173-303-630\(7\)\(a\)\(i\)](#)].
- 18 **III.10.D.6.c** An impermeable coating, as specified in Operating Unit Group 10, Appendices 9.4, 9.5,
19 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 will be
20 maintained for all concrete containment systems and will meet the following performance
21 standards [[WAC 173-303-630\(7\)\(a\)](#)]:
- 22 **III.10.D.6.c.i** The coating must seal the containment system surface such that no cracks, seams,
23 or other pathways through which liquid could migrate are present;
- 24 **III.10.D.6.c.ii** The coating must be of adequate thickness and strength to withstand the normal
25 operation of equipment and personnel within the given area such that degradation
26 or physical damage to the coating or lining can be identified and remedied before
27 waste could migrate from the containment system; and,
- 28 **III.10.D.6.c.iii** The coating must be compatible with the waste managed in the containment
29 system.
- 30 **III.10.D.6.d** The Permittees must inspect all containment systems specified in Permit Table [III.10.D.C](#)
31 in accordance with the inspection schedules and requirements in Operating Unit Group
32 10, Addendum E, as approved/modified pursuant to Permit Conditions III.10.D.10.c.vii
33 and III.10.C.5.c and take the following actions if liquid is detected in these containment
34 systems:
- 35 **III.10.D.6.d.i** Remove the liquid from the containment system in accordance with procedures
36 described in Operating Unit Group 10, Addendum E, (as modified pursuant to
37 Permit Conditions III.10.C.5.b and III.10.C.5.c), Permit Condition III.10.C.6.a,
38 and Operating Unit Group 10, Addendum F1 (as modified pursuant to Permit
39 Condition III.10.C.6.b. and III.10.C.6.c). The liquid removed from containment
40 systems will be managed as dangerous and/or mixed waste, except for liquids
41 from the Non-Radioactive Dangerous Waste Container Storage Area which will
42 be managed as dangerous waste, unless the Permittees demonstrate through
43 designation, (in accordance with [WAC 173-303-070](#), incorporated by reference),
44 that the liquid is no longer dangerous;
- 45 **III.10.D.6.d.ii** Determine the source of the liquid;
- 46 **III.10.D.6.d.iii** If the source of the liquid is determined to be a leak in a container, the Permittees
47 must follow the procedures specified in Permit Condition III.10.D.4.b.x;

- 1 **III.10.D.6.d.iv** The Permittees must take action to ensure the incident that caused liquid to enter
2 the containment system will not reoccur;
- 3 **III.10.D.6.d.v** The Permittees will document in the WTP Unit operating record
4 actions/procedures taken to comply with i through iv above in accordance with
5 [WAC 173-303-630](#)(6); and,
- 6 **III.10.D.6.d.vi** The Permittees will notify and report releases to the environment to Ecology in
7 accordance with Permit Condition III.10.C.6.a.
- 8 **III.10.D.7 Inspections**
- 9 **III.10.D.7.a** The Permittees will inspect the container storage areas in accordance with the Inspection
10 Schedules in Operating Unit Group 10, Addendum E of this Permit, as modified pursuant
11 to Permit Condition III.10.C.5.c.
- 12 **III.10.D.7.b** The inspection data for the container storage areas will be recorded, and the records will
13 be placed in the WTP Unit operating record in accordance with Permit Condition
14 III.10.C.4.
- 15 **III.10.D.8 Recordkeeping [[WAC 173-303-380](#)]**
- 16 For the container storage areas, the Permittees will record and maintain in the WTP Unit
17 operating record, all monitoring, recording, maintenance, calibration, test data, and
18 inspection data compiled under the conditions of this Permit, in accordance with Permit
19 Condition III.10.C.4 and [III.10.C.5](#).
- 20 **III.10.D.9 Closure**
- 21 The Permittees will close the container storage areas identified in Permit Tables
22 III.10.D.A through III.10.D.C in accordance with Operating Unit Group 10, Addendum H
23 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 24 **III.10.D.10 Compliance Schedules**
- 25 **III.10.D.10.a** All information identified for submittal to Ecology in III.10.D.10.b through III.10.D.10.d
26 of this compliance schedule must be signed in accordance with requirements in [WAC](#)
27 [173-303-810](#)(12).
- 28 **III.10.D.10.b** The Permittees will submit to Ecology, consistent with the schedule described in
29 Operating Unit Group 10, Appendix 1.0, for review and approval, prior to construction of
30 container storage area and associated containment systems as identified in Permit Tables
31 III.10.D.A and [III.10.D.B](#) respectively, engineering information as specified below, for
32 incorporation into Operating Unit Group 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5,
33 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit. In order to incorporate
34 engineering information specified below into Operating Unit Group 10, Appendices 9.4,
35 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9, Permit
36 Condition III.10.C.2.g process will be followed. At a minimum, container storage area
37 and containment system drawings and specifications will show the following pursuant to
38 [WAC 173-303-806](#)(4)(b):
- 39 **III.10.D.10.b.i** Design drawings (General Arrangement Drawings - in plan and cross sections)
40 and specifications including references to specific building codes (e.g., UBC,
41 ASCE) for each container storage areas' foundation and associated containment
42 system. These items should show basic design parameters and dimensions, and
43 location of the container storage areas and associated containment systems; how
44 containment system design promotes positive drainage control (such as a locked
45 drainage valve) to prevent release of contaminated liquids and so that
46 uncontaminated liquids can be drained promptly for convenience of operation;
47 capacity of the containment system relative to the volume of the largest container

- 1 to be stored; how the base underlying the containers is sloped (i.e., floor slopes to
2 sumps) or the containment system is otherwise designed and operated to drain
3 and remove liquids resulting from leaks, spills, or other liquids, or how
4 containers are kept from contact with standing liquids in the containment system
5 (i.e., elevated or are otherwise protected); for container storage areas without
6 associated containment systems, a description of how the storage area is designed
7 or operated to drain and remove liquids or how containers are kept from contact
8 with standing liquids;
- 9 **III.10.D.10.b.ii** Containment systems materials selection documentation (including, but not
10 limited to, materials of construction, coatings and liner materials for concrete
11 portions of containment systems);
- 12 **III.10.D.10.b.iii** Sketches, drawings, or data demonstrating compliance with [WAC 173-303-](#)
13 [630](#)(8) (location of buffer zone and containers holding ignitable or reactive
14 waste) and [WAC 173-303-630](#)(9)(c) (location of incompatible waste), where
15 applicable; and,
- 16 **III.10.D.10.b.iv** Submit Permit Table [III.10.D.B](#) completed to provide for all containment
17 systems, the information as specified in each column heading, consistent with
18 information to be provided in III.10.D.10.b.i through **iii** above.
- 19 **III.10.D.10.c** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
20 will update and submit to Ecology, consistent with the schedule described in Operating
21 Unit Group 10, Appendix 1.0, for review and approval, the following, as specified below,
22 for incorporation into Operating Unit Group 10, Addendum C, and Appendices 9.18,
23 10.18, and 12.15, except Permit Condition III.10.D.10.c.vii, which will be incorporated
24 into Operating Unit Group 10, Addendum E. In order to incorporate the following
25 information (specified below) into Operating Unit Group 10, Appendix 9.18, 10.18, and
26 12.15, Permit Condition III.10.C.2.g will be followed. All information provided under
27 this permit condition must be consistent with information provided pursuant to Permit
28 Conditions III.10.D.10.b, III.10.D.10.c, and III.10.D.10.d as approved by Ecology, and
29 will include at a minimum, the following information as required pursuant to [WAC 173-](#)
30 [303-630](#) and [WAC 173-303-340](#):
- 31 **III.10.D.10.c.i** Operating Unit Group 10, Addendum C, Narrative Descriptions, updated;
- 32 **III.10.D.10.c.ii** Descriptions of procedures for addition and removal of waste from containers;
- 33 **III.10.D.10.c.iii** Descriptions of procedures for opening and closing of containers, including any
34 inspections performed prior to opening;
- 35 **III.10.D.10.c.iv** Descriptions of procedures for handling and transport of containers within the
36 WTP Unit;
- 37 **III.10.D.10.c.v** Description of the tracking system used to track containers throughout the WTP
38 Unit pursuant to [WAC 173-303-380](#). The tracking system, at a minimum, will do
39 the following:
- 40 A. Track the location of containers within the WTP Unit;
- 41 B. Track which containers have been shipped off-facility and/or off-site, and to
42 where they have been shipped;
- 43 C. For containers intended for transport off-site, include information in
44 accordance with the requirements specified in [WAC 173-303-190](#)(3)(b);
- 45 D. Record the date container is placed in the container storage area; and,
- 46 E. Record the nature of the waste in any given container, including dangerous
47 waste designation codes, any associated LDR treatment requirements, and

- 1 the major risk(s) associated with the waste (as described in Permit
2 Conditions III.10.D.5.a and III.10.D.5.c).
- 3 **III.10.D.10.c.vi** Descriptions of procedures for container spacing, stacking, and labeling pursuant
4 to [WAC 173-303-630\(3\)](#), [WAC 173-303-630\(5\)\(c\)](#), [WAC 173-303-340\(3\)](#), [WAC](#)
5 [173-303-630\(6\)](#);
- 6 **III.10.D.10.c.vii** Descriptions of procedures for investigating container storage areas and
7 investigating and repairing containment systems [[WAC 173-303-320](#), [WAC 173-](#)
8 [303-630\(6\)](#)];
- 9 **III.10.D.10.c.viii** Descriptions of procedures for responding to damaged (e.g., severe rusting,
10 apparent structural defects) or leaking containers [[WAC 173-303-630\(2\)](#)];
- 11 **III.10.D.10.c.ix** Descriptions of operational procedures demonstrating how accumulated liquids
12 can be analyzed and removed from containment systems to prevent overflow
13 [[WAC 173-303-806\(4\)\(b\)\(i\)\(E\)](#)];
- 14 **III.10.D.10.c.x** For portable containment systems, vendor information, design drawings, or
15 sketches showing the following information. These items will include as a
16 minimum basic design parameters, dimensions, and materials of construction;
17 how the design promotes positive drainage control (such as a locked drainage
18 valve) to prevent release of contaminated liquids and so that uncontaminated
19 liquids can be drained promptly for convenience of operation; how the base
20 underlying the containers is sloped (i.e., floor slopes to sumps) or the
21 containment system is otherwise designed and operated to drain and remove
22 liquids resulting from leaks, spills, or other liquids, or how containers are kept
23 from contact with standing liquids in the containment system (i.e., elevated or are
24 otherwise protected); and capacity of the containment system relative to the
25 volume of the largest container to be stored;
- 26 **III.10.D.10.c.xi** Where ignitable and reactive waste are stored or otherwise managed in
27 containers, a description of the procedures used to ensure compliance with [WAC](#)
28 [173-303-630\(8\)\(a\)](#) and (b);
- 29 **III.10.D.10.c.xii** Where incompatible wastes are stored or otherwise managed in containers, a
30 description of the procedures used to ensure compliance with [WAC 173-303-](#)
31 [630\(9\)\(a\)](#) and (b), and [WAC 173-303-395\(1\)\(b\)](#) and (c);
- 32 **III.10.D.10.c.xiii** Submit Permit Table [III.10.D.C](#) completed to provide for all portable
33 containment systems, the information as specified in each column heading,
34 consistent with information to be provided in III.10.D.10.c.i through xii above;
35 and,
- 36 **III.10.D.10.c.xiv** Test procedures and results or other documentation or information to show that
37 the waste do not contain free liquids, as applicable.
- 38 **III.10.D.10.d** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
39 will submit to Ecology, consistent with the schedule described in Operating Unit Group
40 10, Appendix 1.0, for review and approval, completed Permit Tables III.10.D.A,
41 [III.10.D.B](#), and [III.10.D.C](#), for incorporation into Operating Unit Group 10, Addendum
42 C, and Appendices 9.18, 10.18, and 12.15 of this Permit. In order to incorporate the
43 information into Operating Unit Group 10, Addendum C, and Appendices 9.18, 10.18,
44 and 12.15 of this Permit, Permit Condition III.10.C.2.g process will be followed.
- 45
46

1 **Table III.10.D.A –Container Storage/Containment Building Areas Description**

Dangerous and Mixed Waste Container Storage Areas	Maximum Capacity Gallons (Solids) (ft ³) ^d	Maximum Operating Volume (Liquid ^c)
HLW Vitrification Plant		
IHLW Canister Storage Cave ^a (Room H-0132)	163,599 gal. (21,870 ft ³)	NA
HLW East Corridor El. 0' (Rooms HC-0108/09/10)	183,721 gal. (24,560 ft ³)	NA
HLW Loading Area (Room H-0130)	142,204 gal. (19,010 ft ³)	NA
Other Areas		
Non-Radioactive Dangerous Waste Container Storage Area ^b	56,104 gal. (7,500 ft ³)	RESERVED
Failed Melter Storage Facility	403,947	RESERVED
Lab Waste Management Area (Rooms 0-139, 0-139A/B/C/D)	139,586 gal. (18,660 ft ³)	RESERVED
Containment Buildings/Container Storage	Maximum Capacity Gallons (Solids) (ft ³) ^d	Maximum Operating Volume (Liquid ^c)
Pretreatment Plant		
P-0123 Pretreatment Hot Cell Containment Building	RESERVED	RESERVED
Pretreatment Maintenance Containment Building	RESERVED	RESERVED
PM0124 Hot Cell Crane Maintenance Area	RESERVED	RESERVED
P-0121A Spent Resin Dewatering	RESERVED	RESERVED
P-0421A General Filter Room	RESERVED	RESERVED
P-0122A Waste Packaging Area	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cave	RESERVED	RESERVED
P-0124 C3 Workshop	RESERVED	RESERVED
P-0124A C3 Workshop	RESERVED	RESERVED
P-0125 Filter Cask Airlock	RESERVED	RESERVED
P-0125A Filter Cask Area	RESERVED	RESERVED
P-0128A MSM Repair Area	RESERVED	RESERVED
P-0128 Temporary Storage Room	RESERVED	RESERVED
P-0223 Pretreatment Filter Package Maintenance Containment Building		
P-0335 Pretreatment Filter Cave Room	RESERVED	RESERVED
P-0335A Decon Chamber	RESERVED	RESERVED
P-0431A General Filter Room	RESERVED	RESERVED
LAW Vitrification Plant		
L-0112 LAW LSM Gallery Containment Building	RESERVED	RESERVED

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Waste Treatment and Immobilization Plant

ILAW Container Finishing Containment Building	RESERVED	RESERVED
L-0109B Swabbing Area Line 2		
L-0109C Decontamination Area Line 2		
L-0109D Inert Fill Area Line 2		
L-0115B Swabbing Area Line 1		
L-0115C Decontamination Area Line 1		
L-0115D Inert Fill Area Line 1		
L-0109E Container Monitoring/Export Area		
L-0115E Container Monitoring/Export Area		
L-0119B LAW Consumable Import/Export Containment Building	RESERVED	RESERVED
L-0226A LAW C3 Workshop Containment Building	RESERVED	RESERVED
LAW Pour Cave Containment Building	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave		
L-B013C Melter 1 Pour Cave		
L-B013B Melter 2 Pour Cave		
L-B011C Melter 2 Pour Cave		
L-B011B Future Melter 3 Pour Cave		
L-B009B Future Melter 3 Pour Cave		
ILAW Buffer Container Containment Building		
L-B025C Container Buffer Store	RESERVED	RESERVED
L-B025D Container Rework	RESERVED	RESERVED
HLW Vitrification Plant		
HLW Melter Cave 1 Containment Building:	RESERVED	RESERVED
H-0117 Melter Cave 1		
H-0116B Melter Cave 1 C3/C5 Airlock		
H-0310A Melter Cave 1 Equipment Decon Pit		
HLW Melter Cave 2 Containment Building:	RESERVED	RESERVED
H-0106 Melter Cave 2		
H-0105B Melter Cave 2 C3/C5 Airlock		
H-0304A Melter Cave 2 Equipment Decon Pit		
H-0136 IHLW Canister Handling Cave Containment Building	RESERVED	RESERVED
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	RESERVED	RESERVED
HLW C3 Workshop Containment Building:	RESERVED	RESERVED
H-0311A C3 Workshop		
H-0311B C3 MSM Maintenance Workshop		
H-0104 HLW Filter Cave Containment Building	RESERVED	RESERVED
H-B032 HLW Pour Tunnel 1 Containment Building	RESERVED	RESERVED
H-B005A HLW Pour Tunnel 2 Containment Building	RESERVED	RESERVED
HLW Waste Handling Area Containment Building:	RESERVED	RESERVED
H-0410B E&I Room		
H0411 Waste Handling Room		
HLW Drum Swabbing and Monitoring Area Containment Building:	RESERVED	RESERVED
H-0126A Crane Maintenance Room		
H-0126B Swabbing and Monitoring Area		
H-B028 Cask Transfer Tunnel		

Footnotes:

^aCapacity is for immobilized glass waste storage.

^bCapacity is for dangerous and/or mixed waste storage.

^cAll material within the containment systems will be considered waste for the purposes of calculating free volume, where free volume is the amount of space available in containment systems (i.e., free volume = total capacity of containment systems [which includes total capacity of portable containment systems] minus volume occupied by equipment and containers within containment systems).

^dGallons converted to cubic feet using a conversion factor of 1 gallon (liquid) x 0.134 = 1ft³ (rounded to the nearest whole number).

^eLocation and capacities of containers stored within portable containment systems specified on Table III.10.D.C are limited to the dangerous and mixed waste container storage areas and capacities specified above.

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Table III.10.D.B – Container Storage Area Containment Systems

Container Storage Areas	Permanent Containment System Description – Drawing #s	Permanent Containment System Sump/Floor Drain ID#	Permanent Containment System Dimensions^a (ft) & Materials of Construction	Permanent Containment System Capacity (gal) (relative to 10% of the volume of all containers within the container storage area, or 100% of the volume of the largest container, whichever is greater).
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

^aDimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

3

4

Table III.10.D.C – Container Storage Area Portable Containment Systems^a

Portable Containment System Description – Specifications and Vendor Information	Portable Containment System Container Storage Area(s) Location(s)	Portable Containment System Dimensions^b (ft) & Materials of Construction	Portable Containment System Capacity (gal) (relative to 10% of the volume of all containers managed within the portable containment system, or 100% of the volume of the largest container, whichever is greater).
RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aLocation and capacities of containers stored within portable containment systems specified on this Permit Table are limited to the dangerous and mixed waste container storage areas and capacities specified in Permit Table III.10.D.A.

^bDimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

- 1 **III.10.E TANK SYSTEMS**
- 2 **III.10.E.1 Approved Waste and Storage Limits**
- 3 **III.10.E.1.a** The Permittees may store in tank systems all dangerous and/or mixed waste listed in the
4 Part A Forms, Operating Unit Group 10, Addendum A of this Permit and in accordance
5 with the Waste Analysis Plan, Operating Unit Group 10, Addendum B as approved
6 pursuant to Permit Condition III.10.C.3 of this Permit. Total tank system dangerous
7 and/or mixed waste storage at the Facility will not exceed the volume(s) specified in the
8 Part A Form 3 Permit Application, Addendum A of this permit.
- 9 **III.10.E.1.b** The Permittees may store and manage dangerous and/or mixed waste only in approved
10 tank systems listed in Permit Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#), as
11 approved/modified pursuant to Permit Condition III.10.E.9, in accordance with Permit
12 Section III.10.E of this Permit, and in accordance with Operating Unit Group 10,
13 Addenda 1.0 and 4.0, and Operating Unit Group 10, Appendices 8.1 through 8.15, 9.1
14 through 9.14, 9.18, 10.1 through 10.14, 10.18, and 11.1 through 11.15 of this Permit, as
15 approved pursuant to Permit Conditions III.10.E.9.b through e. The Permittees will limit
16 the total volume of waste to quantities specified for the individual units listed in Permit
17 Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#).
- 18 **III.10.E.1.c** The Permittees will manage ignitable and reactive, and incompatible waste in accordance
19 with [WAC 173-303-395](#)(1). Any tank system specified in Permit Tables [III.10.E.A](#)
20 through [D](#) and III.10.E, [I](#), [K](#), [M](#), and [O](#) as approved/modified pursuant to Permit
21 Condition [III.10.E.9](#), in which ignitable, reactive, or incompatible waste are managed will
22 meet the requirements specified in [WAC 173-303-640](#)(9) and (10).
- 23 **III.10.E.1.d** The Permittees will ensure all certifications required by specialists (e.g., independent,
24 qualified, registered professional engineer (IQRPE); independent corrosion expert;
25 independent, qualified installation inspector; etc.) use the following statement or
26 equivalent pursuant to Permit Condition III.10.C.10 of this Permit:
- 27 “I, (Insert Name), have (choose one or more of the following: overseen, supervised,
28 reviewed, and/or certified) a portion of the design or installation of a new tank system or
29 component located at (address), and owned/operated by (name(s)). My duties were:
30 (e.g., installation inspector, testing for tightness, etc.), for the following tank system
31 components (e.g., the tank, venting piping, etc.), as required by the Dangerous Waste
32 Regulations, namely, [WAC 173-303-640](#)(3) (applicable paragraphs (i.e., (a) through (g)).
- 33 “I certify under penalty of law that I have personally examined and am familiar with the
34 information submitted in this document and all attachments and that, based on my inquiry
35 of those individuals immediately responsible for obtaining the information, I believe that
36 the information is true, accurate, and complete. I am aware that there are significant
37 penalties for submitting false information, including the possibility of fine and
38 imprisonment.”
- 39 **III.10.E.1.e** In all future permit submittals, the Permittees will include tank names with the tank
40 designation (e.g., Process Condensate Vessels located in the RLD System are designated
41 V45028A and V45028B, respectively).
- 42 **III.10.E.2 Tank System Design and Construction**
- 43 **III.10.E.2.a** The Permittees will construct the tank systems identified in Permit Tables [III.10.E.A](#)
44 through [D](#), [I](#), [K](#), [M](#), and [O](#), as approved/modified pursuant to Permit Condition III.10.E.9,
45 as specified in Operating Unit Group 10, Appendices 8.1 through 8.14, 9.1 through 9.14,
46 10.1 through 10.14, and 11.1 through 11.14 of this Permit, as approved pursuant to
47 Permit Conditions III.10.E.9.b, III.10.E.9.c, and III.10.E.9.d.

- 1 **III.10.E.2.b** The Permittees will construct all secondary containment systems identified in Permit
2 Tables [III.10.E.A](#) through D, and I through P, as approved/modified pursuant to Permit
3 Condition III.10.E.9, as specified in Operating Unit Group 10, Appendices 8.2, 8.4
4 through 8.15, 9.2, 9.4 through 9.14, 9.18, 10.2, 10.4 through 10.14, 10.18 and 11.2, 11.4
5 through 11.15, 11.15 of this Permit, as approved pursuant to Permit Conditions
6 III.10.E.9.b, III.10.E.9.c, and III.10.E.9.d.
- 7 **III.10.E.2.c** Modifications to approved design, plans, and specifications in Operating Unit Group 10
8 of this Permit for the WTP Unit Tank Systems will be allowed only in accordance with
9 Permit Conditions [III.10.C.2.e](#) and [f](#), or III.10.C.2.g, III.10.C.9.d, e, and h.
- 10 **III.10.E.2.d** The Permittees will maintain construction access to the internal portions of installed tanks
11 with pulse jet mixers until Ecology has provided written approval of the tank system
12 designs for wear allowance pursuant to [WAC 173-303-640\(3\)\(a\)](#).
- 13 **III.10.E.2.d.i** The Permittees will not install the following tanks in the WTP Unit until Ecology
14 has provided written approval of the tank system designs for wear allowance
15 pursuant to [WAC 173-303-640\(3\)\(a\)](#):
- 16 • Plant Wash Vessel, PWD-VSL-00044;
 - 17 • Acidic Waste Vessel, RLD-VSL-00007;
 - 18 • Plant Wash and Drains Vessel, RLD-VSL-00008;
 - 19 • HLW Feed Receipt Vessel, HLP-VSL-00022;
 - 20 • HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B;
 - 21 • HLW Feed Blend Vessel, HLP-VSL-00028;
 - 22 • Ultrafiltration Feed Preparation Vessels, UFP-VSL-00001A and UFP-VSL-
23 00001B; and,
 - 24 • Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.
- 25 **III.10.E.2.d.ii** Except where exempted in writing by Ecology on the basis that wear allowance
26 provisions will not be affected, fabrication and assembly of the following tanks
27 and their internal components will be suspended until Ecology has provided
28 written approval of the tank system designs for wear allowance pursuant to [WAC](#)
29 [173-303-640\(3\)\(a\)](#):
- 30 • HLW Feed Receipt Vessel, HLP-VSL-00022;
 - 31 • HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B;
 - 32 • HLW Feed Blend Vessel, HLP-VSL-00028; and,
 - 33 • Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B;
- 34 **III.10.E.3 Tank System Installation and Certification**
- 35 **III.10.E.3.a** The Permittees must ensure that proper handling procedures are adhered to in order to
36 prevent damage to the system during installation. Prior to covering, enclosing, or placing
37 a new tank system or component in use, an independent, qualified, installation inspector
38 or an IQRPE, either of whom is trained and experienced in the proper installation of tank
39 systems or components, must inspect the system for the presence of any of the following
40 items:
- 41 **III.10.E.3.a.i** Weld breaks;
 - 42 **III.10.E.3.a.ii** Punctures;
 - 43 **III.10.E.3.a.iii** Scrapes of protective coatings;
 - 44 **III.10.E.3.a.iv** Cracks;

- 1 **III.10.E.3.a.v** Corrosion; and,
- 2 **III.10.E.3.a.vi** Other structural damage or inadequate construction/installation.
- 3 All discrepancies must be remedied before the tank system is covered, enclosed, or
4 placed in use [[WAC 173-303-640\(3\)\(c\)](#)].
- 5 **III.10.E.3.b** For tank systems or components that are placed underground and that are back filled, the
6 Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous
7 substance. The backfill must be installed so that it is placed completely around the tank
8 and compacted to ensure that the tank and piping are fully and uniformly supported
9 [[WAC 173-303-640\(3\)\(d\)](#)].
- 10 **III.10.E.3.c** The Permittees must test for tightness all new tanks and ancillary equipment prior to
11 these components being covered, enclosed, or placed into use. If a tank system is found
12 not to be tight, all repairs necessary to remedy the leak(s) in the system must be
13 performed prior to the tank system being covered, enclosed, or placed in use [[WAC 173-
14 303-640\(3\)\(e\)](#)].
- 15 **III.10.E.3.d** The Permittees must ensure ancillary equipment is supported and protected against
16 physical damage and excessive stress due to settlement, vibration, expansion, or
17 contraction [[WAC 173-303-640\(3\)\(f\)](#)].
- 18 **III.10.E.3.e** The Permittees must provide the type and degree of corrosion protection recommended
19 by an independent corrosion expert, based on the information provided in Operating Unit
20 Group 10, Appendices 8.9, 8.11, 9.9, 9.11, 10.9, 10.11, 11.9, and 11.11 of this Permit, as
21 approved pursuant to Permit Conditions III.10.E.9.b.i, III.10.E.9.b.iv, III.10.E.9.b.v,
22 III.10.E.9.c.i, III.10.E.9.c.iv, III.10.E.9.c.v, III.10.E.9.d.i, III.10.E.9.d.iv, and
23 III.10.E.9.d.v or other corrosion protection if the Ecology believes other corrosion
24 protection is necessary to ensure the integrity of the tank system during use of the tank
25 system. The installation of a corrosion protection system that is field fabricated must be
26 supervised by an independent corrosion expert to ensure proper installation [[WAC 173-
27 303-640\(3\)\(g\)](#)].
- 28 **III.10.E.3.f** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
29 will obtain, and keep on file in the WTP Unit operating record, written statements by
30 those persons required to certify the design of the tank system and supervise the
31 installation of the tank system in accordance with the requirements of WAC 173-303-
32 640(3)(b), (c), (d), (e), (f), and (g), attesting that each tank system and corresponding
33 containment system listed in Permit Tables [III.10.E.A](#) through D and [III.10.E.I](#) through P,
34 as approved/modified pursuant to Permit Condition III.10.E.9, were properly designed
35 and installed, and that repairs, pursuant to WAC 173-303-640(3)(c) and (e) were
36 performed [[WAC 173-303-640\(3\)\(a\)](#) WAC 173-303-640(3)(h)].
- 37 **III.10.E.3.g** The independent tank system installation inspection and subsequent written statements
38 will be certified pursuant to Permit Condition III.10.E.1.d, comply with all requirements
39 of [WAC 173-303-640\(3\)\(h\)](#) and will consider, but not be limited to, the following tank
40 system installation documentation:
- 41 **III.10.E.3.g.i** Field installation report with date of installation;
- 42 **III.10.E.3.g.ii** Approved welding procedures;
- 43 **III.10.E.3.g.iii** Welder qualifications and certification;
- 44 **III.10.E.3.g.iv** Hydro-test reports, as applicable, in accordance with the American Society of
45 Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1,
46 American Petroleum Institute (API) Standard 620, or Standard 650 as applicable;
- 47 **III.10.E.3.g.v** Tester credentials;

- 1 **III.10.E.3.g.vi** Field inspector credentials;
- 2 **III.10.E.3.g.vii** Field inspector reports;
- 3 **III.10.E.3.g.viii** Field waiver reports; and,
- 4 **III.10.E.3.g.ix** Non-compliance reports and corrective action (including field waiver reports)
- 5 and repair reports.
- 6 **III.10.E.4 Integrity Assessments**
- 7 **III.10.E.4.a** The Permittees will ensure periodic integrity assessments are conducted on the WTP Unit
- 8 Tank Systems listed in Permit Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#), as
- 9 approved/modified pursuant to Permit Condition III.10.E.9, over the term of this Permit
- 10 as specified in [WAC 173-303-640\(3\)\(b\)](#), following the description of the integrity
- 11 assessment program and schedule in Operating Unit Group 10, Addendum E of this
- 12 Permit, as approved pursuant to Permit Conditions III.10.E.9.e.i and III.10.C.5.c. Results
- 13 of the integrity assessments will be included in the WTP Unit operating record until ten
- 14 (10) years after post-closure, or corrective action is complete and certified, whichever is
- 15 later.
- 16 **III.10.E.4.b** The Permittees will address problems detected during the tank integrity assessments
- 17 specified in Permit Condition III.10.E.4.a following the integrity assessment program in
- 18 Operating Unit Group 10, Addendum E of this Permit, as approved pursuant to Permit
- 19 Conditions III.10.E.9.e.i and III.10.C.5.c.
- 20 **III.10.E.4.c** The Permittees must immediately and safely remove from service any Tank System or
- 21 secondary containment system which through an integrity assessment is found to be
- 22 “unfit for use” as defined in [WAC 173-303-040](#), following Permit Conditions
- 23 III.10.E.5.i.i through iv, vi, and vii. The affected tank system or secondary containment
- 24 system must be either repaired or closed in accordance with Permit Condition
- 25 III.10.E.5.i.v [\[WAC 173-303-640\(7\)\(e\) and \(f\), WAC 173-303-640\(8\)\]](#).
- 26 **III.10.E.5 Tank Management Practices**
- 27 **III.10.E.5.a** No dangerous and/or mixed waste will be managed in the WTP Unit Tank System unless
- 28 the operating conditions, specified under Permit Condition III.10.E.5 are complied with.
- 29 **III.10.E.5.b** The Permittees will install and test all process and leak detection system
- 30 monitoring/instrumentation, as specified in Permit Tables [III.10.E.E](#) through [H](#), as
- 31 approved/modified pursuant to Permit Condition III.10.E.9, in accordance with Operating
- 32 Unit Group 10, Appendices 8.1, 8.2, 8.14, 9.1, 9.2, 9.14, 10.1, 10.2, 10.14, 11.1, 11.2, and
- 33 11.14 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.ix and
- 34 III.10.E.9.d.x.
- 35 **III.10.E.5.c** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
- 36 materials in the WTP Unit Tank System if these substances could cause the tank system
- 37 to rupture, leak, corrode, or otherwise fail [\[WAC 173-303-640\(5\)\(a\)\]](#).
- 38 **III.10.E.5.d** The Permittees will operate the WTP Unit Tank System to prevent spills and overflows
- 39 using the description of controls and practices as required under [WAC 173-303-640\(5\)\(b\)](#)
- 40 described in Permit Condition III.10.C.5., and Operating Unit Group 10, Appendices
- 41 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition
- 42 III.10.E.9.e.iv [\[WAC 173-303-640\(5\)\(b\), WAC 173-303-806\(4\)\(c\)\(ix\)\]](#).
- 43 **III.10.E.5.e** For routinely non-accessible WTP Unit Tank Systems, as specified in Operating Unit
- 44 Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition
- 45 III.10.E.9.e.vi, the Permittees will mark all routinely non-accessible tank system access
- 46 points with labels or signs to identify the waste contained in the tanks. The label, or sign,
- 47 must be legible at a distance of at least fifty (50) feet and must bear a legend that

1 identifies the waste in a manner which adequately warns employees, emergency response
2 personnel, and the public of the major risk(s) associated with the waste being stored or
3 treated in the tank system(s). For the purposes of this Permit condition, “routinely non-
4 accessible” means personnel are unable to enter these areas while waste is being managed
5 in them [[WAC 173-303-640](#)(5)(d)].

6 **III.10.E.5.f** For all tank systems not addressed in Permit Condition III.10.E.5.e, the Permittees will
7 mark all these tank systems holding dangerous and/or mixed waste with labels or signs to
8 identify the waste contained in the tank. The labels, or sign, must be legible at a distance
9 of at least fifty (50) feet, and must bear a legend that identifies the waste in a manner
10 which adequately warns employees, emergency response personnel, and the public of the
11 major risk(s) associated with the waste being stored or treated in the tank system(s)
12 [[WAC 173-303-640](#)(5)(d)].

13 **III.10.E.5.g** The Permittees will ensure that the secondary containment systems for the WTP Unit
14 Tank Systems listed in Permit Tables [III.10.E.A](#) through D, I, K, M, and O, as
15 approved/modified pursuant to Permit Condition III.10.E.9, are free of cracks or gaps to
16 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
17 system to the soil, ground water, or surface water at any time that waste is in the tank
18 system. Any indication that a crack or gap may exist in the containment systems will be
19 investigated and repaired in accordance with Operating Unit Group 10, Appendices 8.15,
20 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition
21 III.10.E.9.e.v [[WAC 173-303-320](#), [WAC 173-303-640](#)(4)(b)(i), [WAC 173-303-](#)
22 [640](#)(4)(e)(i)(C), [WAC 173-303-640](#)(6), and [WAC 173-303-806](#)(4)(c)(vii)].

23 **III.10.E.5.h** An impermeable coating, as specified in Operating Unit Group 10, Appendices 8.4, 8.5,
24 8.7, 8.9, 8.11, 8.12, 9.4, 9.5, 9.7, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.9, 10.11, 10.12, 11.4,
25 11.5, 11.7, 11.9, 11.11, and 11.12 of this Permit, as approved pursuant to Permit
26 Condition III.10.E.9.b.v, will be maintained for all concrete containment systems and
27 concrete portions of containment systems for each WTP Unit Tank System listed in
28 Permit Tables [III.10.E.A](#) through D and I through P, as approved/modified pursuant to
29 Permit Condition III.10.E.9. Concrete containment systems that do not have a liner and
30 have construction joints, must meet the requirements of [WAC 173-303-640](#)(4)(e)(ii)(C)
31 and [WAC-173-303-806](#)(4)(c)(vii). The coating will prevent migration of any dangerous
32 and/or mixed waste into the concrete. All coatings will meet the following performance
33 standards:

34 **III.10.E.5.h.i** The coating must seal the containment surface such that no cracks, seams, or
35 other avenues through which liquid could migrate are present;

36 **III.10.E.5.h.ii** The coating must be of adequate thickness and strength to withstand the normal
37 operation of equipment and personnel within the given area such that degradation
38 or physical damage to the coating or lining can be identified and remedied before
39 dangerous and/or mixed waste could migrate from the system; and,

40 **III.10.E.5.h.iii** The coating must be compatible with the dangerous and/or mixed waste,
41 treatment reagents, or other materials managed in the containment system [[WAC](#)
42 [173-303-640](#)(4)(e)(ii)(D), [WAC 173-303-806](#)(4)(c)(vii)].

43 **III.10.E.5.i** The Permittees will inspect all secondary containment systems for WTP Unit Tank
44 Systems listed in Permit Tables [III.10.E.A](#) through D and I through P, as
45 approved/modified pursuant to Permit Condition III.10.E.9, in accordance with the
46 Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit,
47 as approved pursuant to Permit Conditions III.10.E.9.e.v. and III.10.C.5, and take the
48 following actions if a leak or spill of dangerous and/or mixed waste is detected in these
49 containment systems [[WAC 173-303-320](#), [WAC 173-303-640](#)(5)(c), [WAC 173-303-](#)
50 [640](#)(6), [WAC 173-303-640](#)(7), [WAC 173-303-806](#)(4)(a)(v)]:

- 1 **III.10.E.5.i.i** Immediately and safely stop the flow of dangerous and/or mixed waste into the
2 tank system or secondary containment system, in accordance with procedures
3 based on all applicable safety analysis documentation;
- 4 **III.10.E.5.i.ii** Determine the source of the dangerous and/or mixed waste;
- 5 **III.10.E.5.i.iii** Remove the waste from the secondary containment area pursuant to [WAC 173-
6 303-640\(7\)\(b\)](#). The waste removed from containment areas of WTP Unit Tank
7 Systems will be managed as dangerous and/or mixed waste;
- 8 **III.10.E.5.i.iv** If the cause of the release was a spill that has not damaged the integrity of the
9 tank system, the Permittees may return the tank system to service pursuant to
10 [WAC 173-303-640\(7\)\(e\)\(ii\)](#). In such a case, the Permittees will take action to
11 ensure the incident that caused liquid to enter the containment systems of these
12 tank systems will not reoccur [[WAC 173-303-320\(3\)](#)];
- 13 **III.10.E.5.i.v** If the source of the dangerous waste and/or mixed waste is determined to be a
14 leak from a primary WTP Unit Tank System, or the system is unfit for use as
15 determined through an integrity assessment or other inspection, the Permittees
16 must comply with the requirements of WAC 173-303-640(7) and take the
17 following actions [[WAC 173-303-640\(5\)\(c\)](#)]:
- 18 A. Close the tank system according to procedures in [WAC 173-303-640\(7\)\(e\)\(i\)](#), and
19 Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to
20 Permit Condition III.10.C.8; or,
- 21 B. Repair and re-certify (in accordance with [WAC 173-303-810\(13\)\(a\)](#) as modified
22 pursuant to Permit Condition III.10.E.1.d) the tank system in accordance with
23 Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as
24 approved pursuant to Permit Condition III.10.E.9.e.v before the tank system is placed
25 back into service [[WAC 173-303-640\(7\)\(e\)](#) and (f), and [WAC 173-303-
26 806\(4\)\(c\)\(vii\)](#)].
- 27 **III.10.E.5.i.vi** The Permittees will document in the operating record actions/procedures taken to
28 comply with III.10.E.5.i.i through v above in accordance with [WAC 173-303-
29 640\(6\)\(d\)](#); and,
- 30 **III.10.E.5.i.vii** The Permittees will notify and report releases to the environment to Ecology in
31 accordance with [WAC 173-303-640\(7\)\(d\)](#).
- 32 **III.10.E.5.j** If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water
33 liquids from damaged or broken pipes) cannot be removed from the secondary
34 containment system within twenty-four (24) hours, Ecology will be verbally notified
35 within twenty-four (24) hours of discovery. The notification will provide the information
36 in A, B, and C listed below. The Permittees will provide Ecology with a written
37 demonstration within seven (7) business days, identifying at a minimum [[WAC 173-303-
38 640\(4\)\(c\)\(iv\)](#), [WAC 173-303-640\(7\)\(b\)\(ii\)](#), [WAC 173-303-806\(4\)\(c\)\(vii\)](#)]:
- 39 A. Reasons for delayed removal;
- 40 B. Measures implemented to ensure continued protection of human health and the
41 environment; and,
- 42 C. Current actions being taken to remove liquids from secondary containment.
- 43 **III.10.E.5.k** The Permittees will operate the WTP Unit Tank System in accordance with Operating
44 Unit Group 10, Addendum C as updated pursuant to Permit Condition [III.10.E.9.e.vi](#) and
45 Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit
46 Condition III.10.E.9.e, and the following:

- 1 **III.10.E.5.k.i** The Permittees will operate the WTP Unit Tank System in order to maintain the
2 systems and process parameters listed in Permit Tables [III.10.E.E](#) through H, as
3 approved/modified pursuant to Permit Condition III.10.E.9, within the operating
4 trips and operating ranges specified in Permit Tables [III.10.E.E](#) through [H](#), and
5 consistent with assumptions and basis which are reflected in Operating Unit
6 Group 10, Appendix, 6.3.1 as approved pursuant to Permit Condition
7 III.10.C.11.b. [[WAC 173-303-815\(2\)\(b\)\(ii\)](#) and [WAC 173-303-640\(5\)\(b\)](#)]. For
8 the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1
9 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit
10 Conditions III.10.C.11.c or III.10.C.11.d; and,
- 11 **III.10.E.5.k.ii** The Permittees will calibrate/function test the instruments listed on Permit Tables
12 [III.10.E.E](#) through H in accordance with Operating Unit Group 10, Appendices
13 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit
14 Condition III.10.E.9.e.xi.
- 15 **III.10.E.5.l** Tank systems that have the potential for formation and accumulation of hydrogen gases
16 must be operated to maintain hydrogen levels below the lower explosive limit (LEL)
17 [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)].
- 18 **III.10.E.5.m** For each tank system holding dangerous waste which are acutely or chronically toxic by
19 inhalation, operate the system to prevent escape of vapors, fumes or other emissions into
20 the air [[WAC 173-303-640\(5\)\(e\)](#), [WAC 173-303-806\(4\)\(c\)\(xii\)](#)].
- 21 **III.10.E.6 Inspections [[WAC 173-303-640\(6\)](#)]**
- 22 **III.10.E.6.a** The Permittees will inspect the WTP Unit Tank Systems in accordance with the
23 Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as
24 modified pursuant to Permit Condition III.10.C.5.c.
- 25 **III.10.E.6.b** The inspection data for the WTP Unit Tank Systems will be recorded, and the records
26 will be placed in the WTP Unit operating record, in accordance with Permit Condition
27 III.10.C.4.
- 28 **III.10.E.7 Recordkeeping [[WAC 173-303-380](#)]**
- 29 For the WTP Unit Tank Systems, the Permittees will record and maintain in the WTP
30 Unit operating record, all monitoring, calibration, recording, maintenance, test data, and
31 inspection data compiled under the conditions of this Permit, in accordance with Permit
32 Conditions III.10.C.4 and [III.10.C.5](#).
- 33 **III.10.E.8 Closure**
- 34 The Permittees will close the WTP Unit Tank Systems in accordance with Operating Unit
35 Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition
36 III.10.C.8.
- 37 **III.10.E.9 Compliance Schedule**
- 38 **III.10.E.9.a** All information identified for submittal to Ecology in b. through e. of this compliance
39 schedule must be signed and certified in accordance with requirements in [WAC 173-303-](#)
40 [810\(12\)](#), as modified in accordance with Permit Condition III.10.E.1.d [[WAC 173-303-](#)
41 [806\(4\)](#)].
- 42 **III.10.E.9.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
43 construction of each secondary containment and leak detection system for the WTP Unit
44 Tank System (per level, per WTP Unit building and outside the WTP Unit buildings) as
45 identified in Permit Tables [III.10.E.A](#) through [D](#), [J](#), [L](#), [N](#), and [P](#), engineering information
46 as specified below, for incorporation into Operating Unit Group 10, Appendices 8.4, 8.5,
47 8.7, 8.8, 8.9, 8.11, 8.12, 9.4, 9.5, 9.7, 9.8, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.8, 10.9,

1 10.11, 11.4, 11.5, 11.7, 11.8, 11.9, and 11.11 of this Permit. At a minimum, engineering
2 information specified below will show the following as required pursuant to [WAC 173-](#)
3 [303-640](#) (the information specified below will include dimensioned engineering drawings
4 and information on sumps and floor drains):

- 5 **III.10.E.9.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak
6 detection system) will include review of design drawings, calculations, and other
7 information on which the certification report is based and will include as
8 applicable, but not limited to, review of such information described below.
9 Information (drawings, specifications, etc.) already included in Operating Unit
10 Group 10, Appendices 8.0 through 11.0 of this Permit, may be included in the
11 report by reference and should include drawing and document numbers. IQRPE
12 Reports will be consistent with the information separately provided in Permit
13 Conditions III.10.E.9.b.ii through ix below. The IQRPE Report(s) (specific to
14 foundation, secondary containment, and leak detection system) for the LAW and
15 HLW buildings (-21 foot elevation only) will be submitted with the first IQRPE
16 Report for tanks, identified in Permit Condition III.10.E.9.c.i [[WAC 173-303-](#)
17 [640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i)];
- 18 **III.10.E.9.b.ii** Design drawings (General Arrangement Drawings in plan and cross sections) and
19 specifications for the foundation, secondary containment, including, liner
20 installation details, and leak detection methodology [Note: leak detection systems
21 for areas where daily, direct, or remote visual inspection is not feasible, will be
22 continuous in accordance with [WAC 173-303-640](#)(4)(e)(iii)(C)]. These items
23 should show the dimensions, volume calculations, and location of the secondary
24 containment system, and should include items such as floor/pipe slopes to sumps,
25 tanks, and floor drains [[WAC 173-303-640](#)(4)(b) through (f), [WAC 173-303-](#)
26 [640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i)];
- 27 **III.10.E.9.b.iii** The Permittees will provide the design criteria (references to codes and
28 standards, load definitions, and load combinations, materials of construction, and
29 analysis/design methodology) and typical design details for the support of the
30 secondary containment system. This information will demonstrate the
31 foundation will be capable of providing support to the secondary containment
32 system, resistance to pressure gradients above and below the system, and capable
33 of preventing failure due to settlement, compression, or uplift [[WAC 173-303-](#)
34 [640](#)(4)(c)(ii), [WAC 173-303-806](#)(4)(c)(vii)];
- 35 **III.10.E.9.b.iv** A description of materials and equipment used to provide corrosion protection
36 for external metal components in contact with soil, including factors affecting the
37 potential for corrosion as required under [WAC 173-303-640](#)(3)(a)(iii)(B) [[WAC](#)
38 [173-303-806](#)(4)(c)(v)];
- 39 **III.10.E.9.b.v** Secondary containment/foundation and leak detection system materials selection
40 documentation (including, but not limited to, concrete coatings and water stops,
41 and liner materials as applicable) [[WAC 173-303-806](#)(4)(c)(i)];
- 42 **III.10.E.9.b.vi** Detailed description of how the secondary containment for each tank system will
43 be installed in compliance with [WAC 173-303-640](#)(3)(c) [[WAC 173-303-](#)
44 [806](#)(4)(c)(vi)];
- 45 **III.10.E.9.b.vii** Submit Permit Tables [III.10.E.J](#), [L](#), [N](#), and [P](#), completed to provide for all
46 secondary containment sumps and floor drains, the information as specified in
47 each column heading, consistent with information to be provided in Permit
48 Conditions III.10.E.9.b.i through vi above;

- 1 **III.10.E.9.b.viii** Documentation that secondary containment and leak detection systems will not
2 accumulate hydrogen gas levels above the LEL and in accordance with Appendix
3 7.15 for incorporation into the Administrative Record [[WAC 173-303-340](#)]; and,
- 4 **III.10.E.9.b.ix** A detailed description of how tank system design provides access for conducting
5 future tank integrity assessments [[WAC 173-303-640](#)(3)(b), [WAC 173-303-](#)
6 [806](#)(4)(c)(vi)].
- 7 **III.10.E.9.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
8 installation of each tank as identified in Permit Tables [III.10.E.A](#) through D, and I, K, M,
9 and O engineering information as specified below, for incorporation into Operating Unit
10 Group 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through
11 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14
12 of this Permit. Tanks will include primary sumps. At a minimum, engineering
13 information specified below will show the following as required pursuant to [WAC 173-](#)
14 [303-640](#) (the information specified below will include dimensioned engineering
15 drawings):
- 16 **III.10.E.9.c.i** IQRPE Reports (specific to tanks) will include review of design drawings,
17 calculations, and other information on which the certification report is based and
18 will include as applicable, but not limited to, review of such information
19 described below. Information (drawings, specifications, etc.) already included in
20 Operating Unit Group 10, Appendices 8.0 through 11.0 of this Permit, may be
21 included in the report by reference and should include drawing and document
22 numbers. The IQRPE Reports will be consistent with the information separately
23 provided in Permit Conditions III.10.E.9.c.ii through III.10.E.9.c.xii below and
24 the IQRPE Report specified in Permit Condition III.10.E.9.b.i [[WAC 173-303-](#)
25 [640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i)];
- 26 **III.10.E.9.c.ii** Design drawings (General Arrangement Drawings in plan and cross sections,
27 Process Flow Diagrams (PDFs), Piping and Instrumentation Diagrams (P&IDs)
28 [including pressure control systems], Mechanical Drawings) and specifications,
29 and other information, specific to tanks (to show location and physical attributes
30 of each tank) [[WAC 173-303-640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i) through
31 (iv)];
- 32 **III.10.E.9.c.iii** The Permittees will provide the design criteria (references to codes and
33 standards, load definitions, and load combinations, materials of construction, and
34 analysis/design methodology) and typical design details for the support of the
35 tank(s). Structural support calculations specific to off-specification, non-
36 standard, and field fabricated tanks will be submitted for incorporation into the
37 Administrative Record [[WAC 173-303-640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i)];
- 38 **III.10.E.9.c.iv** A description of materials and equipment used to provide corrosion protection
39 for external metal components in contact with water, including factors affecting
40 the potential for corrosion as required under [WAC 173-303-640](#)(3)(a)(iii)(B)
41 [[WAC 173-303-806](#)(4)(c)(v)];
- 42 **III.10.E.9.c.v** Tank materials selection documentation (e.g., physical and chemical tolerances)
43 [[WAC 173-303-640](#)(3)(a), [WAC 173-303-806](#)(4)(c)(i)];
- 44 **III.10.E.9.c.vi** Tank vendor information (including, but not limited to required performance
45 warranties, as available), consistent with information submitted under
46 III.10.E.9.c. ii, above, will be submitted for incorporation into the Administrative
47 Record [[WAC 173-303-640](#), and [WAC 173-303-806](#)(4)(c)];
- 48 **III.10.E.9.c.vii** System Descriptions related to tanks will be submitted for incorporation into the
49 Administrative Record;

- 1 **III.10.E.9.c.viii** Mass balance for each projected operating condition, including assumptions and
2 formulas used to complete the mass balance, so that they can be independently
3 verified, and will be submitted for incorporation into the Administrative Record;
- 4 **III.10.E.9.c.ix** A detailed description of how the tanks will be installed in compliance with
5 [WAC 173-303-640](#)(3)(c), (d), and (e) [[WAC 173-303-806](#)(4)(c)(vi)];
- 6 **III.10.E.9.c.x** Submit Permit Tables [III.10.E.I](#), K, M, and O, completed to provide for all
7 primary containment sumps and floor drains, the information as specified in each
8 column heading, consistent with information to be provided in Permit Conditions
9 III.10.E.9.c.i through ix;
- 10 **III.10.E.9.c.xi** Documentation that tanks are designed to prevent the accumulation of hydrogen
11 gas levels above the LEL for incorporation into the Administrative Record
12 [[WAC 173-303-340](#)]; and,
- 13 **III.10.E.9.c.xii** Documentation that tanks are designed to prevent escape of vapors and emissions
14 of acutely or chronically toxic (upon inhalation) EHW limit and in accordance
15 with Appendix 7.15 for incorporation into the Administrative Record [[WAC 173-](#)
16 [303-640](#)(5)(e), [WAC 173-303-806](#)(4)(c)(xii)];
- 17 **III.10.E.9.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
18 installation of ancillary equipment for each tank system, as identified in Permit Tables
19 [III.10.E.A](#), through D, and [I](#) through [P](#), not addressed in Permit Condition III.10.E.9.c,
20 engineering information as specified below, for incorporation into Operating Unit Group
21 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14,
22 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of
23 this Permit. At a minimum, engineering information specified below will show the
24 following as required pursuant to [WAC 173-303-640](#) (the information specified below
25 will include dimensioned engineering drawings):
- 26 **III.10.E.9.d.i** IQRPE Reports (specific to ancillary equipment) will include a review of design
27 drawings, calculations, and other information as applicable, on which the
28 certification report is based. The reports will include, but not be limited to,
29 review of such information described below. Information (drawings,
30 specifications, etc.) already included in Operating Unit Group 10, Appendix 8.0
31 through 11.0 of this Permit, may be included in the report by reference and
32 should include drawing and document numbers. The IQRPE Reports will be
33 consistent with the information provided separately in Permit Conditions
34 III.10.E.9.d.ii through xiii below and the IQRPE Reports specified in Permit
35 Conditions III.10.E.9.b and III.10.E.9.c [[WAC 173-303-640](#)(3)(a), [WAC 173-](#)
36 [303-806](#)(4)(c)(i)];
- 37 **III.10.E.9.d.ii** Design drawings (PFDs, P&IDs) [including pressure control systems], etc.)
38 specifications (including required performance warranties), and other information
39 specific to ancillary equipment (these drawings should include all equipment
40 such as pipe, valves, fittings, pumps, instruments, etc.) [[WAC 173-303-640](#)(3)(a),
41 [WAC 173-303-806](#)(4)(c)(i), (iii), (iv)];
- 42 **III.10.E.9.d.iii** The Permittees will provide the design criteria (references to codes and
43 standards, load definitions, and load combinations, materials of construction, and
44 analysis/design methodology) and typical design details for the support of the
45 ancillary equipment [[WAC 173-303-640](#)(3)(a), [WAC 173-303-640](#)(3)(f), [WAC](#)
46 [173-303-806](#)(4)(c)(i)];
- 47 **III.10.E.9.d.iv** A description of materials and equipment used to provide corrosion protection
48 for external metal components in contact with soil and water, including factors

- 1 affecting the potential for corrosion as required under WAC 173-303-
2 640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];
- 3 **III.10.E.9.d.v** Materials selection documentation for ancillary equipment (e.g., physical and
4 chemical tolerances) [[WAC 173-303-640\(3\)\(a\)](#), [WAC 173-303-806\(4\)\(c\)\(i\)](#)];
- 5 **III.10.E.9.d.vi** Vendor information, consistent with information submitted under III.10.E.9.d. ii.
6 above, will be submitted for incorporation into the Administrative Record [[WAC](#)
7 [173-303-640](#), and [WAC 173-303-806\(4\)\(c\)](#)];
- 8 **III.10.E.9.d.vii** Tank, ancillary equipment, and leak detection system instrument control logic
9 narrative description (e.g., software functional specifications, descriptions of fail-
10 safe conditions, etc.);
- 11 **III.10.E.9.d.viii** System Descriptions related to ancillary equipment and system descriptions
12 related to leak detection systems, for incorporation into the Administrative
13 Record;
- 14 **III.10.E.9.d.ix** A detailed description of how the ancillary equipment will be installed and tested
15 [[WAC 173-303-640\(3\)\(c\)](#) through (e), [WAC 173-303-640\(4\)\(b\)](#) and (c), and
16 [WAC 173-303-806\(4\)\(c\)\(vi\)](#)];
- 17 **III.10.E.9.d.x** For process monitoring, control, and leak detection system instrumentation for
18 the WTP Unit Tank System as identified in Permit Tables [III.10.E.E](#) through [H](#), a
19 detailed description of how the process monitoring, control, and leak detection
20 system instrumentation will be installed and tested [[WAC 173-303-640\(3\)\(c\)](#)
21 through (e), [WAC 173-303-640\(4\)\(b\)](#) and (c), [WAC 173-303-806\(4\)\(c\)\(vi\)](#)];
- 22 **III.10.E.9.d.xi** Mass balance for projected normal operating condition used in developing the
23 process and instrumentation diagrams, including assumptions and formulas used
24 to complete the mass balance, so that they can be independently verified, for
25 incorporation into the Administrative Record;
- 26 **III.10.E.9.d.xii** Documentation that ancillary equipment is designed to prevent the accumulation
27 of hydrogen gas levels above the LEL for incorporation into the Administrative
28 Record [[WAC 173-303-340](#)]; and,
- 29 **III.10.E.9.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent
30 with information submitted under Permit Condition [III.10.E.9.c.ii](#) and Permit
31 Conditions III.10.E.9.d.ii, vii, viii, and x above, will be submitted for
32 incorporation into the Administrative Record.
- 33 **III.10.E.9.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
34 will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, the following as
35 specified below for incorporation into Operating Unit Group 10, Appendices 8.15, 9.18,
36 10.18, 11.15 of this Permit, except Permit Condition III.10.E.9.e.v, which will be
37 incorporated into Operating Unit Group 10, Addendum E of this Permit. All information
38 provided under this permit condition must be consistent with information provided
39 pursuant to Permit Conditions III.10.E.9.b, c, d, and e., III.10.C.3.e, and III.10.C.11.b, as
40 approved by Ecology.
- 41 **III.10.E.9.e.i** Integrity assessment program and schedule for all WTP Unit tanks will address
42 the conducting of periodic integrity assessments on all WTP Unit tanks over the
43 life of the tank, in accordance with III.10.E.9.b.ix and [WAC 173-303-640\(3\)\(b\)](#),
44 and descriptions of procedures for addressing problems detected during integrity
45 assessments. The schedule must be based on past integrity assessments, age of
46 the tank system, materials of construction, characteristics of the waste, and any
47 other relevant factors [[WAC 173-303-640\(3\)\(b\)](#), [WAC 173-303-806\(4\)\(c\)\(vi\)](#)];

- 1 **III.10.E.9.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is
2 operated so that it will detect the failure of either the primary or secondary
3 containment structure or the presence of any release of dangerous and/or mixed
4 waste, or accumulated liquid in the secondary containment system within twenty-
5 four (24) hours. Detection of a leak of at least 0.1 gallons per hour within
6 twenty-four (24) hours is defined as being able to detect a leak within twenty-
7 four (24) hours. Any exceptions to this criteria must be approved by Ecology
8 [[WAC 173-303-640\(4\)\(c\)\(iii\)](#)], [[WAC 173-303-806\(4\)\(c\)\(vii\)](#)];
- 9 **III.10.E.9.e.iii** Detailed operational plans and descriptions, demonstrating that spilled or leaked
10 waste and accumulated liquids can be removed from the secondary containment
11 system within twenty-four (24) hours [[WAC 173-303-806\(4\)\(c\)\(vii\)](#)];
- 12 **III.10.E.9.e.iv** Descriptions of operational procedures demonstrating appropriate controls and
13 practices are in place to prevent spills and overflows from tanks or containment
14 systems in compliance with [WAC 173-303-640\(5\)\(b\)\(i\)](#) through (iii) [[WAC 173-](#)
15 [303-640\(5\)\(b\)](#)], [[WAC 173-303-806\(4\)\(c\)\(ix\)](#)];
- 16 **III.10.E.9.e.v** Description of procedures for investigation and repair of tank systems [[WAC](#)
17 [173-303-320](#), [WAC 173-303-640\(6\)](#), [WAC 173-303-640\(7\)\(e\)](#) and (f), [WAC](#)
18 [173-303-806\(4\)\(a\)\(v\)](#), [WAC 173-303-806\(4\)\(c\)\(vii\)](#)];
- 19 **III.10.E.9.e.vi** Updated Addendum C, Narrative Descriptions, Tables and Figures as identified
20 in Permit Tables [III.10.E.A](#) through [D](#) (as modified pursuant to Permit Condition
21 III.10.E.9.e.xii) and updated to identify routinely non-accessible tank systems;
- 22 **III.10.E.9.e.vii** Description of procedures for management of ignitable and reactive, and
23 incompatible dangerous and/or mixed waste in accordance with [WAC 173-303-](#)
24 [640\(9\)](#) and (10) [[WAC 173-303-806\(4\)\(c\)\(x\)](#)];
- 25 **III.10.E.9.e.viii** A description of the tracking system used to track dangerous and/or mixed waste
26 throughout the WTP Unit Tank System, pursuant to [WAC 173-303-380](#);
- 27 **III.10.E.9.e.ix** Permit Tables [III.10.E.E](#) through [H](#) will be completed for WTP Unit Tank
28 System process and leak detection system monitors and instruments (to include
29 but not limited to: instruments and monitors measuring and/or controlling flow,
30 pressure, temperature, density, pH, level, humidity, and emission) to provide the
31 information as specified in each column heading. Process and leak detection
32 system monitors and instruments for critical systems as specified in Operating
33 Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition
34 III.10.C.9.b and for operating parameters as required to comply with Permit
35 Condition III.10.C.3.e.iii will be addressed. Process monitors and instruments
36 for non-waste management operations (e.g., utilities, raw chemical storage, non-
37 contact cooling waters, etc.) are excluded from this permit condition.
- 38 **III.10.E.9.e.x** Supporting documentation for operating trips and expected operating range as
39 specified in Permit Tables [III.10.E.E](#) through [H](#) as approved pursuant to Permit
40 Condition III.10.E.9.e.ix;
- 41 **III.10.E.9.e.xi** Documentation of process and leak detection instruments and monitors (as listed
42 in Permit Tables [III.10.E.E](#) through [H](#)) for the WTP Unit Tank Systems are to
43 include but not be limited to the following:
- 44 A. Procurement specifications;
45 B. Location used;
46 C. Range, precision, and accuracy;

- 1 D. Detailed descriptions of calibration/functionality test procedures (e.g., method
2 number [ASTM]) or provide a copy of manufacturer's recommended calibration
3 procedures;
- 4 E. Calibration/functionality test, inspection, and routine maintenance schedules and
5 checklists, including justification for calibration, inspection and maintenance
6 frequencies, criteria for identifying instruments found to be significantly out of
7 calibration, and corrective action to be taken for instruments found to be significantly
8 out of calibration (e.g., increasing frequency of calibration, instrument replacement,
9 etc.); and,
- 10 F. Equipment instrument control logic narrative description (e.g., software functional
11 specifications, descriptions of fail-safe conditions, etc.), as identified in Permit
12 Tables [III.10.E.E](#) through [H](#) not addressed in Permit Condition III.10.E.9.d.

13 **III.10.E.9.e.xii** Permit Tables [III.10.E.A](#) through [D](#) amended as follows:

- 14 A. Under column 1, update and complete list of dangerous and/or mixed waste tank
15 systems, including plant items that comprise each system (listed by item number);
- 16 B. Under column 2, update and complete system designations;
- 17 C. Under column 3, replace the 'reserved' with the Operating Unit Group 10,
18 Appendices 8.0, 9.0, 10.0, and 11.0, subsections specific to tank systems as listed in
19 column 1;
- 20 D. Under column 4, update and complete list of narrative description tables and figures;
21 and,
- 22 E. Under column 5, update and complete maximum capacity, for each tank; and,

23 **III.10.E.9.e.xiii** Permit Tables [III.10.E.I](#), [K](#), [M](#), and [O](#) amended as follows:

- 24 A. Under column 1, replace the 'reserved' with the updated and complete list of sump
25 numbers and room location;
- 26 B. Under column 2, replace the 'reserved' with the updated and complete maximum
27 sump capacities in gallons;
- 28 C. Under column 3, replace the 'reserved' with the updated and complete sump
29 dimensions and materials of construction; and,
- 30 D. Under column 4, replace the 'reserved' with the updated and complete list of
31 engineering descriptions (drawing numbers, specifications, etc.);
- 32

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Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>Waste Feed Receipt Process System</u></p> <p>FRP-VSL-00002A (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002B (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002C (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002D (Waste Feed Receipt Vessel)</p>	FRP	<p><u>24590-PTF</u></p> <p>-M2-FRP-P0001, Rev 2</p> <p>-M2-FRP-P0002, Rev 2</p> <p>-M2-FRP-P0003, Rev 2</p> <p>-M2-FRP-P0004, Rev 4</p> <p>-M5-V17T-00003, Rev 2</p> <p>-M6-FRP-00001, Rev3</p> <p>-M6-FRP-00002, Rev 3</p> <p>-M6-FRP-00003, Rev 3</p> <p>-M6-FRP-00005, Rev 3</p> <p>-M6-FRP-00006, Rev 3</p> <p>-M6-FRP-00007, Rev 3</p> <p>-M6-FRP-00008, Rev 3</p> <p>-M6-FRP-00009, Rev 3</p> <p>-M6-FRP-00010, Rev 3</p> <p>-MVD-FRP-00005, Rev 10</p> <p>-MVD-FRP-00006, Rev 10</p> <p>-MVD-FRP-00007, Rev 10</p> <p>-MVD-FRP-00008, Rev 10</p> <p>-N1D-FRP-00001, Rev 7</p> <p>-P1-P01T-00001, Rev 7</p> <p>-P1-P01T-P0002, Rev 7</p> <p><u>24590-WTP</u></p> <p>-3PS-G000-T0002, Rev 1</p> <p>-3PS-MV00-T0001, Rev 4</p> <p>-3PS-MV00-T0002, Rev 3</p> <p>-3PS-MV00-T0003, Rev 3</p>	<p>Section 4.1.2.1; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>FRP-VSL-00002A = 472,900</p> <p>FRP-VSL-00002B = 472,900</p> <p>FRP-VSL-00002C = 472,900</p> <p>FRP-VSL-00002D = 472,900</p>
<p><u>Waste Feed Evaporation Process System</u></p>	FEP	<p><u>24590-PTF</u></p> <p>-3PS-MEVV-T0001, Rev 2</p>	<p>Section 4.1.2.2; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A</p>	<p>FEP-VSL-00005 = 5,022</p>

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p>FEP-VSL-00005 (Waste Feed Evaporator Condensate Vessel)</p> <p>FEP-VSL-00017A (Waste Feed Evaporator Feed Vessel)</p> <p>FEP-VSL-00017B (Waste Feed Evaporator Feed Vessel)</p>		<p>-M5-V17T-00004001, Rev 3 -M6-FEP-00001001, Rev 0 -M6-FEP-00001002, Rev 0 -M6-FEP-00003001, Rev 0 -M6-FEP-00003002, Rev 0 -M6-FEP-00006001, Rev 0 -M6-FEP-00006002, Rev 0 -M6-FEP-00006003, Rev 0 -M6-FEP-00006004, Rev 0 -M6-FEP-00007001, Rev 0 -M6-FEP-00007002, Rev 0 -M6-FEP-00007003, Rev 0 -M6-FEP-00007004, Rev 0 -M6-FEP-00008, Rev 4 -MVD-FEP-P0001, Rev 2 -MVD-FEP-P0002, Rev 2 -MVD-FEP-P0003, Rev 1 -MV-FEP-P0001, Rev 0 -MV-FEP-P0002, Rev 0 -N1D-FEP-00002, Rev 6 -N1D-FEP-P0003, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-P0007, Rev 6</p> <p>24590-WTP -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	<p>of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>FEP-VSL-00017A = 85,496</p> <p>FEP-VSL-00017B = 85,496</p>
<u>Ultrafiltration Process System</u>	UFP	<u>24590-PTF</u>	Section 4.1.2.3; Tables 4-2 and 4-6;	UFP-VSL-00001A = 75,594

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
UFP-VSL-00001A (Ultrafiltration Feed Preparation Vessel)		-M5-V17T-00009, Rev 2	and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	UFP-VSL-00001B = 75,594
UFP-VSL-00001B (Ultrafiltration Feed Preparation Vessel)		-M5-V17T-00011, Rev 2		UFP-VSL-00002A = 39,629
UFP-VSL-00002A (Ultrafiltration Feed Vessel)		-M6-UFP-00001001, Rev 0		UFP-VSL-00002B = 40,378
UFP-VSL-00002B (Ultrafiltration Feed Vessel)		-M6-UFP-00001002, Rev 0		UFP-VSL-00062A = 34,700
UFP-VSL-00062A (Ultrafilter Permeate Collection Vessel)		-M6-UFP-00001003, Rev 0		UFP-VSL-00062B = 34,700
UFP-VSL-00062B (Ultrafilter Permeate Collection Vessel)		-M6-UFP-00001004, Rev 0		UFP-VSL-00062C = 34,700
UFP-VSL-00062C (Ultrafilter Permeate Collection Vessel)		-M6-UFP-00001005, Rev 0		UFP-FILT-00001A= 474
UFP-FILT-00001A (Ultrafilter)		-M6-UFP-00001006, Rev 0		UFP-FILT-00001B = 474
UFP-FILT-00001B (Ultrafilter)		-M6-UFP-00002001, Rev 0		UPF-FILT-00002A = 474
UFP-FILT-00002A (Ultrafilter)		-M6-UFP-00002002, Rev 0		UPF-FILT-00002B = 474
UFP-FILT-00002B (Ultrafilter)		-M6-UFP-00002003, Rev 0		UPF-FILT-00003A = 474
UFP-FILT-00003A (Ultrafilter)		-M6-UFP-00002004, Rev 0		UPF-FILT-00003B = 474
UFP-FILT-00003B (Ultrafilter)		-M6-UFP-00002005, Rev 0		UPF-FILT-00004A = 380
UFP-FILT-00004A (Ultrafilter)		-M6-UFP-00002006, Rev 0		UPF-FILT-00004B = 380
UFP-FILT-00004B (Ultrafilter)		-M6-UFP-00002007, Rev 0		UPF-FILT-00005A = 380
UFP-FILT-00005A (Ultrafilter)		-M6-UFP-00002008, Rev 0		UPF-FILT-00005B = 380
UFP-FILT-00005B (Ultrafilter)		-M6-UFP-00003001, Rev 0		
UFP-FILT-00005C (Ultrafilter)		-M6-UFP-00003002, Rev 0		
UFP-FILT-00006A (Ultrafilter)		-M6-UFP-00003003, Rev 0		
UFP-FILT-00006B (Ultrafilter)		-M6-UFP-00003004, Rev 0		
UFP-FILT-00006C (Ultrafilter)		-M6-UFP-00003005, Rev 0		
UFP-FILT-00007A (Ultrafilter)		-M6-UFP-00003006, Rev 0		
UFP-FILT-00007B (Ultrafilter)		-M6-UFP-00003007, Rev 0		
UFP-FILT-00007C (Ultrafilter)		-M6-UFP-00003008, Rev 0		
UFP-FILT-00008A (Ultrafilter)		-M6-UFP-00004001, Rev 0		
UFP-FILT-00008B (Ultrafilter)		-M6-UFP-00004002, Rev 0		
UFP-FILT-00008C (Ultrafilter)		-M6-UFP-00004003, Rev 0		
UFP-FILT-00009A (Ultrafilter)		-M6-UFP-00005001, Rev 0		
UFP-FILT-00009B (Ultrafilter)		-M6-UFP-00005002, Rev 0		
UFP-FILT-00009C (Ultrafilter)		-M6-UFP-00005003, Rev 0		
UFP-FILT-00010A (Ultrafilter)		-M6-UFP-00005004, Rev 0		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
UFP-FILT-00003B (Ultrafilter) UFP-FILT-00004A (Ultrafilter) UFP-FILT-00004B (Ultrafilter) UFP-FILT-00005A (Ultrafilter) UFP-FILT-00005B (Ultrafilter)		-M6-UFP-00005005, Rev 0 -M6-UFP-00005006, Rev 0 -M6-UFP-00005007, Rev 0 -M6-UFP-00006001, Rev 0 -M6-UFP-00006002, Rev 0 -M6-UFP-00006003, Rev 0 -M6-UFP-00006004, Rev 0 -M6-UFP-00006005, Rev 0 -M6-UFP-00006006, Rev 0 -M6-UFP-00006007, Rev 0 -M6-UFP-00007001, Rev 0 -M6-UFP-00007002, Rev 0 -M6-UFP-00007003, Rev 0 -M6-UFP-00007004, Rev 0 -M6-UFP-00007005, Rev 0 -M6-UFP-00007006, Rev 0 -M6-UFP-00007007, Rev 0 -M6-UFP-00008001, Rev 0 -M6-UFP-00008002, Rev 0 -M6-UFP-00008003, Rev 0 -M6-UFP-00008004, Rev 0 -M6-UFP-00008005, Rev 0 -M6-UFP-00008006, Rev 0 -M6-UFP-00008007, Rev 0 -M6-UFP-00009001, Rev 0 -M6-UFP-00009002, Rev 0 -M6-UFP-00009003, Rev 0 -M6-UFP-00009004, Rev 0 -M6-UFP-00009005, Rev 0 -M6-UFP-00009006, Rev 0 -M6-UFP-00010001, Rev 0 -M6-UFP-00010002, Rev 0		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-M6-UFP-00010003, Rev 0 -M6-UFP-00010004, Rev 0 -M6-UFP-00010005, Rev 0 -M6-UFP-00010006, Rev 0 -M6-UFP-00010007, Rev 0 -M6-UFP-00011001, Rev 0 -M6-UFP-00011002, Rev 0 -M6-UFP-00011003, Rev 0 -M6-UFP-00011004, Rev 0 -M6-UFP-00011005, Rev 0 -M6-UFP-P0013, Rev 0 -M6-UFP-00015001, Rev 0 -M6-UFP-00015002, Rev 0 -M6-UFP-00016001, Rev 0 -M6-UFP-00017001, Rev 0 -M6-UFP-00021001, Rev 0 -M6-UFP-00021002, Rev 0 -M6-UFP-00022001, Rev 0 -M6-UFP-00022002, Rev 0 -MLD-UFP-P0007, Rev 1 -MVD-UFP-00001, Rev 11 -MVD-UFP-P00014, Rev 0 -MVD-UFP-P00015, Rev 0 -MVD-UFP-P0002, Rev 1 -MVD-UFP-P0005, Rev 1 -MVD-UFP-P0006, Rev 1 -MVD-UFP-P0007, Rev 1 -MV-UFP-P0001, Rev 1 -MV-UFP-P0002, Rev 2 -MV-UFP-P0003, Rev 0 -MV-UFP-P0004, Rev 0 -MV-UFP-P0005, Rev 0		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-MV-UFP-P0006, Rev 0 -MV-UFP-P0007, Rev 0 -N1D-UFP-P0001, Rev 2 -N1D-UFP-P0002, Rev 2 -N1D-UFP-P0003, Rev 5 -N1D-UFP-P0004, Rev 3 -N1D-UFP-P0005, Rev 2 -N1D-UFP-P0008, Rev 2 -N1D-UFP-00009, Rev 0 -P1-P01T-00001, Rev 7 24590-WTP -3PS-G000-T0002, Rev 8 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3 -3PS-MV00-T0001, Rev 4		
<u>HLW Lag Storage and Feed Blending Process System</u> HLP-VSL-00022 (HLW Feed Receipt Vessel) HLP-VSL-00027A (HLW Lag Storage Vessel) HLP-VSL-00027B (HLW Lag Storage Vessel) HLP-VSL-00028 (HLW Feed Blend Vessel)	HLP	<u>24590-PTF-</u> -M5-V17T-00007, Rev 2 -M5-V17T-00008, Rev 3 -M6-HLP-00001001, Rev 0 -M6-HLP-00001002, Rev 0 -M6-HLP-00001003, Rev 0 -M6-HLP-00002001, Rev 0 -M6-HLP-00002002, Rev 0 -M6-HLP-00003001, Rev 0 -M6-HLP-00003002, Rev 0 -M6-HLP-00003003, Rev 0 -M6-HLP-00005001, Rev 0 -M6-HLP-00005002, Rev 0 -M6-HLP-00005003, Rev 0 -M6-HLP-00005004, Rev 0	Section 4.1.2.4; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	HLP-VSL-00022 = 268,800 HLP-VSL-00027A = 127,260 HLP-VSL-00027B = 127,260 HLP-VSL-00028 = 142,200

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-M6-HLP-00005005, Rev 0 -M6-HLP-00005006, Rev 0 -M6-HLP-00005007, Rev 0 -M6-HLP-00006001, Rev 0 -M6-HLP-00006002, Rev 0 -M6-HLP-00006003, Rev 0 -M6-HLP-00006004, Rev 0 -M6-HLP-00006005, Rev 0 -M6-HLP-00006006, Rev 0 -M6-HLP-00006007, Rev 0 -M6-HLP-00007001, Rev 0 -M6-HLP-00007002, Rev 0 -M6-HLP-00007003, Rev 0 -M6-HLP-00007004, Rev 0 -M6-HLP-00007005, Rev 0 -M6-HLP-00007006, Rev 0 -M6-HLP-00007007, Rev 0 -M6-HLP-00009001, Rev 0 -M6-HLP-00009002, Rev 0 -M6-HLP-00009003, Rev 0 -M6-HLP-00010001, Rev 0 -M6-HLP-00010002, Rev 0 -M6-HLP-00010003, Rev 0 -MVD-HLP-P0006, Rev1 -MVD-HLP-P0007, Rev 1 -MVD-HLP-P0008, Rev1 -MVD-HLP-P0009, Rev 1 -MV-HLP-00003, Rev 2 -MV-HLP-00004, Rev 2 -MV-HLP-00005, Rev 2 -MV-HLP-00006, Rev 2 -N1D-HLP-00001, Rev 6		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-N1D-HLP-P0003, Rev 1 -N1D-HLP-00007, Rev 6 -N1D-HLP-00010, Rev 6 -P1-P01T-00001, Rev 7 <u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-TP003 -3PS-MV00-T0003, Rev 3		
<u>Cesium Ion Exchange Process System</u> CXP-VSL-00001 (Cesium Ion Exchange Feed Vessel) CXP-VSL-00004 (Cesium Ion Exchange Caustic Rinse Collection Vessel) CXP-VSL-00005 (Cesium Reagent Vessel) CXP-VSL-00026A (Cesium Ion Exchange Treated LAW Collection Vessel) CXP-VSL-00026B (Cesium Ion Exchange Treated LAW Collection Vessel) CXP-VSL-00026C (Cesium Ion Exchange Treated LAW Collection	CXP	<u>24590-PTF</u> -M5-V17T-00012, Rev 3 -M5-V17T-00013, Rev 3 -M5-V17T-00025, Rev 1 -M6-CXP-00001001, Rev 0 -M6-CXP-00001002, Rev 0 -M6-CXP-00001003, Rev 0 -M6-CXP-00001004, Rev 0 -M6-CXP-00001005, Rev 0 -M6-CXP-00002001, Rev 0 -M6-CXP-00002002, Rev 0 -M6-CXP-00003001, Rev 0 -M6-CXP-00003002, Rev 0 -M6-CXP-00003003, Rev 0 -M6-CXP-00005001, Rev 0 -M6-CXP-00005002, Rev 0 -M6-CXP-00005003, Rev 0 -M6-CXP-00005004, Rev 0 -M6-CXP-00007, Rev 2 -M6-CXP-000100001, Rev 0 -M6-CXP-000100002, Rev 0 -	Section 4.1.2.5; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	CXP-VSL-00001 = 103,350 CXP-VSL-00004 = 10,633 CXP-VSL-00005 = 1,141 CXP-VSL-00026A = 38,000 CXP-VSL-00026B = 38,000 CXP-VSL-00026C = 38,000 CXP-IXC-00001 = 680 CXP-IXC-00002 = 680 CXP-IXC-00003 = 680 CXP-IXC-00004 = 680

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Vessel) CXP-IXC-00001 (Cesium Ion Exchange Column) CXP-IXC-00002 (Cesium Ion Exchange Column) CXP-IXC-00003 (Cesium Ion Exchange Column) CXP-IXC-00004 (Cesium Ion Exchange Column)		-M6-CXP-000100003, Rev 0 -M6-CXP-000100004, Rev 0 -M6-CXP-00011001, Rev 0 -M6-CXP-00011002, Rev 0 -M6-CXP-00011003, Rev 0 -M6-CXP-00011004, Rev 0 -M6-CXP-00011005, Rev 0 -M6-CXP-00011006, Rev 0 -M6-CXP-00011007, Rev 0 -M6-CXP-00012001, Rev 0 -M6-CXP-00012002, Rev 0 -M6-CXP-00012003, Rev 0 -M6-CXP-00012004, Rev 0 -M6-CXP-00013, Rev2 -MV-CXP-P0001, Rev 0 -MV-CXP-P0002, Rev 0 -MV-CXP-P0003, Rev 0 -MV-CXP-P0008, Rev 0 -MV-CXP-P0009, Rev 0 -MV-CXP-P0010, Rev 0 -MVD-CXP-P0007, Rev 0 -MVD-CXP-P0015, Rev 0 -MVD-CXP-P0016, Rev 0 -MVD-CXP-P0021, Rev 1 -MVD-CXP-P0022, Rev 1 -MVD-CXP-P0023, Rev 1 -N1D-CXP-P0001, Rev 1 -N1D-CXP-P0003, Rev 1 -N1D-CXP-P0007, Rev 1 -N1D-CXP-P0008, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		24590-WTP -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<u>Cesium Nitric Acid Recovery Process System</u> CNP-VSL-00001 (Cesium Evaporator Eluant Lute Pot) CNP-VSL-00003 (Eluate Contingency Storage Vessel) CNP-VSL-00004 (Cesium Evaporator Recovered Nitric Acid Vessel)	CNP	24590-PTF -M5-V17T-00014, Rev 2 -M6-CNP-00001, Rev 2 -M6-CNP-00002, Rev 2 -M6-CNP-00003, Rev 3 -M6-CNP-00004, Rev 3 -M6-CNP-00005, Rev 2 -MV-CNP-P0001, Rev 1 -MV-CNP-P0002, Rev 1 -MV-CNP-P0005, Rev 0 -MVD-CNP-P0003, Rev 1 -MVD-CNP-P0007, Rev 2 -MVD-CNP-P0010, Rev 0 -N1D-CNP-P0006, Rev 3 -N1D-CNP-P0009, Rev 1 -N1D-CNP-P0011, Rev 1 -P1-P01T-00001, Rev 7	Section 4.1.2.6; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	CNP-VSL-00001 = 109 CNP-VSL-00003 = 21,713 CNP-VSL-00004 = 11,115
<u>Treated LAW Concentrate Storage Process System</u> TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel)	TCP	24590-PTF -M5-V17T-00006, Rev 1 -M6-TCP-00001001, Rev 0 -M6-TCP-00001002, Rev 0 -M6-TCP-00002001, Rev 1 -M6-TCP-00002002, Rev 1	Section 4.2.2.12; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TCP-VSL-00001 = 146,740

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-M6-TCP-00002003, Rev 1 -M6-TCP-00002004, Rev 1 -M6-TCP-00002005, Rev 1 -MV-TCP-P0002, Rev 1 -MVD-TCP-P0002, Rev 2 -N1D-TCP-P0001, Rev 2 -P1-P01T-00001, Rev 7 <u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<u>Treated LAW Evaporation Process System</u> TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel) TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel) TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel)	TLP	<u>24590-PTF</u> -3PS-MEVV-T0001, Rev 2 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 -M6-TLP-00002, Rev 3 -M6-TLP-00003, Rev 3 -MVD-TLP-P0001, Rev 2 -MVD-TLP-P0002, Rev 2 -MVD-TLP-00004, Rev 1 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0001, Rev 2 -N1D-TLP-P0006, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 <u>24590-WTP</u> -3PS-G000-T0002, Rev 8	Section 4.1.2.11; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TLP-VSL-00002 = 2,227 TLP-VSL-00009A = 130,010 TLP-VSL-00009B = 130,010

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<p><u>Spent Resin and Dewatering Process System</u></p> <p>RDP-VSL-00002A (Spent Resin Slurry Vessel)</p> <p>RDP-VSL-00002B (Spent Resin Slurry Vessel)</p> <p>RDP-VSL-00002C (Spent Resin Slurry Vessel)</p> <p>RDP-VSL-00004 (Spent Resin Dewatering Moisture Separation Vessel)</p>	RDP	<p><u>24590-PTF</u></p> <p>-3PS-MWD0-TP003, Rev 1 -M5-V17T-00020, Rev 2 -M6-RDP-00001, Rev 3 -M6-RDP-00002, Rev 4 -M6-RDP-00006, Rev 3 -MVD-RDP-P0005, Rev 1 -MVD-RDP-P0006, Rev 1 -MVD-RDP-P0007, Rev 3 -MVD-RDP-P0008, Rev 0 -MV-RDP-P0001, Rev 0 -MV-RDP-P0002, Rev 0 -MV-RDP-P0003, Rev 0 -P1-P01T-00001, Rev 7</p> <p><u>24590-WTP</u></p> <p>-3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	Section 4.1.2.13; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	RDP-VSL-00002A = 15,230 RDP-VSL-00002B = 15,230 RDP-VSL-00002C = 15,230 RDP-VSL-00004 = 101
<p><u>Pretreatment Plant Radioactive Liquid Waste Disposal System</u></p>	RLD	<p><u>24590-PTF</u></p> <p>-M5-V17T-00022003, Rev 2 -M5-V17T-00022004, Rev 2</p>	Section 4.1.2.16; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10,	RLD-TK-00006A = 343,734 RLD-TK-00006B = 343,734

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p>RLD-TK-00006A (Process Condensate Tank)</p> <p>RLD-TK-00006B (Process Condensate Tank)</p> <p>RLD-VSL-00017A (Alkaline Effluent Vessel)</p> <p>RLD-VSL-00017B (Alkaline Effluent Vessel)</p>		<p>-M6-RLD-00001, Rev 2 -M6-RLD-00002, Rev 3 -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -M6-RLD-00004, Rev 2 -M6-RLD-00006, Rev 3 -MVD-RLD-P0005, Rev 3 -MVD-RLD-P0006, Rev 3 -MV-RLD-P0001, Rev 0 -MV-RLD-P0002, Rev 0 -N1D-RLD-P0002, Rev 2 -P1-P01T-00001, Rev 7</p> <p>24590-WTP -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	<p>Addendum C of this Permit.</p>	<p>RLD-VSL-00017A = 34,340</p> <p>RLD-VSL-00017B = 34,340</p>
<p><u>Pretreatment Plant Wash and Disposal System</u></p> <p>PWD-VSL-00015 (Acidic/Alkaline Effluent Vessel)</p> <p>PWD-VSL-00016 (Acidic/Alkaline Effluent Vessel)</p> <p>PWD-VSL-00033 (Ultimate Overflow Vessel)</p>	<p>PWD</p>	<p>24590-PTF -M5-V17T-00022001, Rev 2 -M5-V17T-00022002, Rev 2 -M6-PWD-00001, Rev 2 -M6-PWD-00002001, Rev 0 -M6-PWD-00002002, Rev 0 -M6-PWD-00003, Rev 4 -M6-PWD-00005, Rev 3 -M6-PWD-00006, Rev 2 -M6-PWD-00007, Rev 3 -M6-PWD-00008, Rev 3 -M6-PWD-00009, Rev 3</p>	<p>Section 4.1.2.15; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>PWD-VSL-00015 = 119,150</p> <p>PWD-VSL-00016 = 119,150</p> <p>PWD-VSL-00033 = 41,650</p> <p>PWD-VSL-00043 = 41,650</p> <p>PWD-VSL-00044 = 103,024</p> <p>PWD-VSL-00046 = 4,982</p>

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p>PWD-VSL-00043 (HLW Effluent Transfer Vessel)</p> <p>PWD-VSL-00044 (Plant Wash Vessel)</p> <p>PWD-VSL-00046 (C3 Floor Drain Collection Vessel)</p>		<p>-M6-PWD-00010, Rev 3</p> <p>-M6-PWD-00011, Rev 2</p> <p>-M6-PWD-00012, Rev 2</p> <p>-M6-PWD-00014, Rev 3</p> <p>-M6-PWD-P0018, Rev 0</p> <p>-M6-PWD-P0019, Rev 0</p> <p>-M6-PWD-00020001, Rev 0</p> <p>-M6-PWD-00020002, Rev 0</p> <p>-M6-PWD-00020003, Rev 0</p> <p>-M6-PWD-00020004, Rev 0</p> <p>-M6-PWD-00020005, Rev 0</p> <p>-M6-PWD-00020006, Rev 0</p> <p>-M6-PWD-00021001, Rev 0</p> <p>-M6-PWD-00021002, Rev 0</p> <p>-M6-PWD-00021003, Rev 0</p> <p>-M6-PWD-00021004, Rev 0</p> <p>-M6-PWD-00021005, Rev 0</p> <p>-M6-PWD-00021006, Rev 0</p> <p>-M6-PWD-00023001, Rev 0</p> <p>-M6-PWD-00023002, Rev 0</p> <p>-M6-PWD-00023003, Rev 0</p> <p>-M6-PWD-00023004, Rev 0</p> <p>-M6-PWD-00023005, Rev 0</p> <p>-M6-PWD-00024001, Rev 0</p> <p>-M6-PWD-00024002, Rev 0</p> <p>-M6-PWD-00024003, Rev 0</p> <p>-M6-PWD-00024004, Rev 0</p> <p>-M6-PWD-00024005, Rev 0</p> <p>-M6-PWD-00024006, Rev 0</p> <p>-M6-PWD-00024007, Rev 0</p> <p>-M6-PWD-00025001, Rev 0</p> <p>-M6-PWD-00025002, Rev 0</p>		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-M6-PWD-00025003, Rev 0 -M6-PWD-00025004, Rev 0 -M6-PWD-00026, Rev 2 -M6-PWD-00029, Rev 3 -M6-PWD-00033, Rev 2 -M6-PWD-00041, Rev 3 -M6-PWD-00043, Rev3 -M6-PWD-00044, Rev 3 -M6-PWD-00046, Rev 2 -M6-PWD-00050, Rev 2 -M6-PWD-00051, Rev 2 -M6-PWD-00057, Rev 4 -M6-PWD-00058, Rev 4 -MVD-PWD-P0001, Rev 3 -MVD-PWD-P0002, Rev 3 -MVD-PWD-P0003, Rev 2 -MVD-PWD-P0010, Rev 1 -MVD-PWD-P0011, Rev 3 -MVD-PWD-P0012, Rev 3 -MV-PWD-P0001001, Rev 1 -MV-PWD-P0001002, Rev 1 -MV-PWD-P0003001 , Rev 1 -MV-PWD-P0003002, Rev 1 -MV-PWD-P0005, Rev 1 -MV-PWD-P0006, Rev 1 -MV-PWD-P0007, Rev 1 -MV-PWD-P0010, Rev 1 -N1D-PWD-P0001, Rev 1 -N1D-PWD-P0002, Rev 5 -N1D-PWD-P0003, Rev 3 -N1D-PWD-P0005, Rev 2 -N1D-PWD-P0006, Rev 2		

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-P1-P01T-00001, Rev 7 -P1-P01T-00006, Rev 4		
<p><u>Pretreatment Vessel Vent Process System</u></p> <p>PVP-VSL-00001 (Vessel Vent HEME Drain Collection Vessel)</p>	PVP	<p><u>24590-PTF</u></p> <p>-M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -M6-PVP-00002, Rev 3 -M6-PVP-00004001, Rev 0 -M6-PVP-00004002, Rev 0 -M6-PVP-P0009, Rev 0 -M6-PVP-00017001, Rev 0 -M6-PVP-00017002, Rev 0 -M6-PVP-00017003, Rev 0 -M6-PVP-00018001, Rev 0 -M6-PVP-00018002, Rev 0 -MVD-PVP-P0001, Rev 0 -MV-PVP-P0002, Rev 1 -N1D-PVP-P0002Rev 1 -P1-P01T-00001, Rev 7</p> <p><u>24590-WTP</u></p> <p>-3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	Section 4.1.2.16; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	PVP-VSL-00001 = 1,969
<p><u>Pretreatment In-Cell Handling System</u></p> <p>PIH-TK-00001 (Decontamination Soak Tank)</p>	PIH	<p><u>24590-PTF</u></p> <p>-M6-PIH-P0001, Rev 0 -P1-P01T-00001, Rev 7</p>	Section 4.1.2.14; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	PIH-TK-00001 = 1,504

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Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>LAW Concentrate Receipt Process System</u></p> <p>LCP-VSL-00001 (LAW Melter 1 Concentrate Receipt Vessel)</p> <p>LCP-VSL-00002 (LAW Melter 2 Concentrate Receipt Vessel)</p>	LCP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0001, Rev 0 -M5-V17T-P0002, Rev 0 -M6-LCP-P0001, Rev 3 -M6-LCP-P0002, Rev 2 -MV-LCP-P0001, Rev 0 -MV-LCP-P0002, Rev 0 -MVD-LCP-P0004, Rev 1 -MVD-LCP-P0005, Rev 1 -N1D-LCP-P0001, Rev 1 -P1-P01T-00002, Rev 5 -P1-P01T-00011, Rev 6</p>	<p>Section 4.1.3.1; Tables 4-3 and 4-6; and Figures C1-1 and C1-3 of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>LCP-VSL-00001 = 18,130</p> <p>LCP-VSL-00002 = 18,130</p>
<p><u>LAW Melter Feed Process System</u></p> <p>LFP-VSL-00001 (Melter 1 Feed Preparation Vessel)</p> <p>LFP-VSL-00002 (Melter 1 Feed Vessel)</p> <p>LFP-VSL-00003 (Melter 2 Feed Preparation Vessel)</p> <p>LFP-VSL-00004 (Melter 2 Feed Vessel)</p>	LFP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0001, Rev 0 -M5-V17T-P0002, Rev 0 -M6-LFP-P0001, Rev 2 -M6-LFP-P0003, Rev 2 -MV-LFP-P0001, Rev 0 -MV-LFP-P0002, Rev 0 -MV-LFP-P0004, Rev 0 -MV-LFP-P0005, Rev 0 -MVD-LFP-P0007, Rev 1 -MVD-LFP-P0008, Rev 1 -MVD-LFP-P0010, Rev 1 -MVD-LFP-P0011, Rev 1 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8 -P1-P01T-00011, Rev 6 -N1D-LFP-00004, Rev 2 -N1D-LFP-00006, Rev 0</p>	<p>Section 4.1.3.1; Tables 4-3 and 4-6; and Figures C1-1 and C1-3 of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>LFP-VSL-00001 = 9,123</p> <p>LFP-VSL-00002 = 9,123</p> <p>LFP-VSL-00003 = 9,123</p> <p>LFP-VSL-00004 = 9,123</p>

Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>LAW Secondary Off-gas/Vessel Vent Process System</u></p> <p>LVP-TK-00001 (LAW Caustic Collection Tank)</p>	LVP	<p><u>24590-LAW</u> -M5-V17T-P0011, Rev 1 -P1-P01T-00004, Rev 3 -P1-P01T-00009, Rev 8 -MT-LVP-00004, Rev 1 -MTD-LVP-P0001, Rev 0 -N1D-LVP-00002, Rev 2</p>	<p>Section 4.1.3.3; Tables 4-3 and 4-6; and Figures C1-1 and C1-3 of Operating Unit Group 10, Addendum C of this Permit.</p>	LVP-TK-00001= 14,232
<p><u>LAW Primary Off-gas Process System</u></p> <p>LOP-VSL-00001 (LAW Melter 1 SBS Condensate Vessel)</p> <p>LOP-VSL-00002 (LAW Melter 2 SBS Condensate Vessel)</p>	LOP	<p><u>24590-LAW</u> -M5-V17T-P0007, Rev 0 -M5-V17T-P0008, Rev 0 -M6-LOP-P0001, Rev 2 -M6-LOP-P0002, Rev2 -MV-LOP-P0001, Rev 0 -MV-LOP-P0002, Rev 0 -MVD-LOP-P0004, Rev 1 -MVD-LOP-P0005, rev 1 -N1D-LOP-00002, Rev 3 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8</p>	<p>Section 4.1.3.3; Tables 4-3 and 4-6; and Figures C1-1 and C1-3 of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>LOP-VSL-00001 = 9,056 LOP-VSL-00002 = 9,056</p>
<p><u>LAW Vitrification Plant Radioactive Liquid Waste Disposal System</u></p> <p>RLD-VSL-00003 (Plant Wash Vessel)</p> <p>RLD-VSL-00004 (C3/C5 Drains/Sump Collection Vessel)</p> <p>RLD-VSL-00005 (SBS Condensate</p>	RLD	<p><u>24590-LAW</u> -M5-V17T-P0014, Rev 2 -M6-RLD-00001001, Rev 0 -M6-RLD-00001002, Rev 0 -M6-RLD-00001003, Rev 0 -M6-RLD-00001004, Rev 0 -M6-RLD-00001005, Rev 0 -M6-RLD-00001006, Rev 0</p>	<p>Section 4.1.3.4; Tables 4-3 and 4-6; and Figures C1-1 and C1-3 of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>RLD-VSL-00003 = 25,780 RLD-VSL-00004 = 7,696 RLD-VSL-00005 = 25,780</p>

Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Collection Vessel)		-M6-RLD-00002001, Rev 0 -M6-RLD-00002002, Rev 0 -M6-RLD-00002003, Rev 0 -M6-RLD-00002004, Rev 0 -M6-RLD-00002005, Rev 0 -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -MVD-RLD-P0001, Rev 1 -MVD-RLD-P0006, Rev 2 -MVD-RLD-P0007, Rev 2 -MV-RLD-P0001, Rev 2 -MV-RLD-P0002, Rev 1 -MV-RLD-P0003, Rev 1 -P1-P01T-00001, Rev 3 -P1-P01T-00002, Rev 5 -P1-P01T-00007, Rev 8 -P1-P01T-00010, Rev 8 -P1-P01T-00011, Rev 6 -N1D-RLD-00001, Rev 5 -N1D-RLD-00002, Rev 3 -N1D-RLD-00005, Rev 4		

Table III.10.E.C – HLW Vitrification Plant Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>HLW Concentrate Receipt Process System</u></p> <p>The HCP System has ancillary equipment only.</p>	HCP	<p><u>24590-HLW</u> -M5-V17T-P0001, Rev 4 -M6-HCP-00001001, Rev 0 -M6-HCP-00002001, Rev 0</p>	<p>Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.</p>	
<p><u>HLW Melter Feed Process System</u></p> <p>HFP-VSL-00001 (Melter 1 Feed Preparation Vessel)</p>	HFP	<p><u>24590-HLW</u> -3YD-HFP-00001^a -M5-V17T-P0001, Rev 4 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11 -M6-HFP-00001001, Rev 0 -M6-HFP-00001002, Rev 0 -M6-HFP-00001003, Rev 0 -M6-HFP-00001004, Rev 0 -M6-HFP-00007001, Rev 0</p> <p><u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	<p>Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.</p>	HFP-VSL-00001 = 8,311
<p><u>Melter Feed Process System cont.</u></p> <p>HFP-VSL-00002 (Melter 1 Feed Vessel)</p>	HFP	<p><u>24590-HLW</u> -3YD-HFP-00001^a -M5-V17T-P0001, Rev 4 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11 -M6-HFP-00002001, Rev 0 -M6-HFP-00002002, Rev 0 -M6-HFP-00002003, Rev 0 -M6-HFP-00008001, Rev 0 -</p>	<p>Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.</p>	HFP-VSL-00002 = 8,311

Table III.10.E.C – HLW Vitrification Plant Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		<u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<u>Melter Feed Process System cont.</u> HFP-VSL-00005 (Melter 2 Feed Preparation Vessel)	HFP	<u>24590-HLW</u> -3YD-HFP-00001 ^a -M5-V17T-P0001, Rev 4 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11 -M6-HFP-20001001, Rev 0 -M6-HFP-20001002, Rev 0 -M6-HFP-20001003, Rev 0 -M6-HFP-20001004, Rev 0 -M6-HFP-20007001, Rev 0 <u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3	Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	HFP-VSL-00005 =8,311
<u>Melter Feed Process System cont.</u> HFP-VSL-00006 (Melter 2 Feed Vessel)	HFP	<u>24590-HLW</u> -3YD-HFP-00001 ^a -M5-V17T-P0001, Rev 4 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11 -M6-HFP-20002001, Rev 3 -M6-HFP-20002002, Rev 3 -M6-HFP-20002003, Rev 3 -M6-HFP-20008001, Rev 0 - <u>24590-WTP</u>	Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	HFP-VSL-00006 = 8,311

Table III.10.E.C – HLW Vitrification Plant Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<p><u>Melter Off-gas Treatment Process System</u></p> <p>HOP-VSL-00903 (Melter 1 SBS Condensate Receiver Vessel)</p> <p>HOP-VSL-00904 (Melter 2 SBS Condensate Receiver Vessel)</p>	HOP	<p><u>24590-HLW</u> -3YD-HOP-00001^a -M5-V17T-P0003, Rev 1 -M5-V17T-P20003, Rev 1 -M6-HOP-00004, Rev 4 -M6-HOP-00006, Rev 5 -M6-HOP-20004, Rev 5 -M6-HOP-20006, Rev 6 -MVD-HOP-P0001, Rev 2 -MVD-HOP-P0012, Rev 1 -MV-HOP-P0001, Rev 2 -MV-HOP-P0003, Rev 2 -N1D-HOP-P0009, Rev 2 -P1-P01T-00001, Rev 9</p> <p><u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3</p>	Section 4.1.4.3; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	<p>HOP-VSL-00903 = 9,891</p> <p>HOP-VSL-00904 = 9,891</p>
<p><u>HLW Canister Decontamination Handling System</u></p> <p>HDH-VSL-00001 (Canister Rinse Vessel)</p> <p>HDH-VSL-00002 (Canister Decon Vessel 1)</p> <p>HDH-VSL-00003 (Waste Neutralization Vessel)</p>	HDH	<p><u>24590-HLW</u> -M5-V17T-00006, Rev 6 -M6-HDH-P0001, Rev 2 -M6-HDH-P0002, Rev 2 -M6-HDH-P20001, Rev 2 -M0-HDH-P0012001, Rev 1 -M0-HDH-P0012002, Rev 1 -MV-HDH-P0003, Rev 1</p> <p>-MVD-HDH-P0003, Rev 2 -MVD-HDH-P0006, Rev 2</p>	Section 4.1.4.7; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	<p>HDH-VSL-00001= 3,314</p> <p>HDH-VSL-00002 =630</p> <p>HDH-VSL-00003 = 5,315</p> <p>HDH-VSL-00004 = 630</p>

Table III.10.E.C – HLW Vitrification Plant Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
HDH-VSL-00004 (Canister Decon Vessel 2)		-MVD-HDH-P0009, Rev 0 -MVD-HDH-P0012, Rev 1 -N1D-HDH-P0003, Rev 1 -N1D-HDH-P0005, Rev1 -N1D-HDH-P0007, Rev 1 -P1-P01T-00001, Rev 9 -P1-P01T-00002, Rev 7 -3YD-HDH-00002 ^a 24590-WTP -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<u>HLW Melter Cave Support Handling System</u> HSH-TK-00001 (Decontamination Tank Melter Cave 1) HSH-TK-00002 (Decontamination Tank Melter Cave 2)	HSH	24590-HLW -M6-HSH-P0004, Rev 0 -M6-HSH-P20004, Rev 0 -M0-HSH-P0072, Rev 1 -N1D-HSH-P0001, Rev 1 -P1-P01T-00002, Rev 7	Section 4.1.4.7; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	HSH-TK-00001 = 4,000 HSH-TK-00002 = 4,000
<u>HLW Vitrification Plant Radioactive Liquid Waste Disposal System</u> RLD-VSL-00002 (Off-gas Drains Collection Vessel) RLD-VSL-00007 (Acidic Waste Vessel) RLD-VSL-00008 (Plant Wash & Drain Vessel)	RLD	24590-HLW -3YD-RLD-00001 ^a -M5-V17T-P0007001, Rev 1 -M5-V17T-P0007002, Rev 1 -M6-RLD-00001, Rev 3 -M6-RLD-00002, Rev 3 -M6-RLD-00006, Rev 4 -M6-RLD-00007, Rev 4 -M6-RLD-00014, Rev 5 -MV-RLD-00002, Rev 2	Section 4.1.5.5; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of Operating Unit Group 10, Addendum C of this Permit.	RLD-VSL-00002 = 334 RLD-VSL-00007 = 18,145 RLD-VSL-00008 = 13,774

Table III.10.E.C – HLW Vitrification Plant Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-MV-RLD-00003, Rev 0 -MVD-RLD-00005, Rev 7 -MVD-RLD-00007, Rev 7 -MVD-RLD-00008, Rev 4 -N1D-RLD-P0001, Rev 0 -N1D-RLD-P0006, Rev 0 -N1D-RLD-P0013, Rev 0 -P1-P01T-00001, Rev 9 -P1-P01T-00002, Rev 7 <u>24590-WTP</u> -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
<p>Footnotes: ^aSystem Descriptions are maintained in the Administrative Record, and are listed here for information only.</p>				

Table III.10.E.D – Analytical Laboratory Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos. Specification Nos. etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>Radioactive Liquid Waste Disposal System</u></p> <p>RLD-VSL-00164 (Laboratory Area Sink Drain Collection Vessel)</p> <p>RLD-VSL-00165 (Hot Cell Drain Collection Vessel)</p>	<p>RLD</p>	<p><u>24590-LAB</u></p> <p>-3YD-RLD-00001^a</p> <p>-M5-V17T-P0029, Rev 1</p> <p>-M6-RLD-P0001, Rev 2</p> <p>-M6-RLD-P0002, Rev 1</p> <p>-M6-RLD-P0006, Rev 1</p> <p>-M6-RLD-P0007, Rev 1</p> <p>-M6-RLD-P0008, Rev 1</p> <p>-MVD-RLD-P0164, Rev 1</p> <p>-MVD-RLD-P0165, Rev 1</p> <p>-MV-RLD-P0001, Rev 0</p> <p>-MV-RLD-P0003, Rev 0</p> <p>-N1D-RLD-P0002, Rev 1</p> <p>-N1D-RLD-P0003, Rev 1</p> <p>-P1-60-P0007, Rev 2</p> <p>-P1-60-P0008, Rev 2</p> <p>-P1-60-P0010, Rev 1</p> <p><u>24590-WTP</u></p> <p>-3PS-G000-T0002, Rev 8</p> <p>-3PS-MV00-T0001, Rev 4</p> <p>-3PS-MV00-T0002, Rev 3</p> <p>-3PS-MV00-T0003, Rev 3</p>	<p>Section 4.1.5.5; Table C-5 and 4-6 of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>RLD-VSI-00164 = 3,180</p> <p>RLD-VSL-00165 = 9,100</p>
<p>Footnotes:</p> <p>^aSystem Descriptions are maintained in the Administrative Record, and are listed here for information only.</p>				

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-SUMP-00071 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00040 ^a	Not Applicable	Bubbler Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00004 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00005 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00006 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-SUMP-00007 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00009 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00010 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00011 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00012 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00013 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00026 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00028 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00029 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-SUMP-00031 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00032 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00033 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00034 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00035 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00036 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00037 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PVP-BULGE-00001	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PVP-BULGE-	Not	Radar Leak	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
00002	Applicable	Detector							
TCP-BULGE-00004	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
DIW-BULGE-00001	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
DIW-BULGE-00002	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
CRP-BULGE-00001	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
CXP-BULGE-00004	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
UFP-BULGE-00001	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
UFP-BULGE-00002	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
UFP-BULGE-00005	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
UFP-BULGE-00006	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00001	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00002	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00003	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-LDB-00004	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00005	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00006	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00007	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00008	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00009	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00010	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00011	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-	Not	Thermal	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
00012	Applicable	Dispersion Level Switch							
PWD-LDB-00013	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00014	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00015	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00016	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00017	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00018	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-LDB-00019	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00012	Not Applicable	Thermal Dispersion	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
		Level Switch							
RLD-LDB-00013	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
ASX Sampler 00013 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ASX Sampler 00017 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ASX Sampler 00019 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ASX Sampler 00020 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ASX Sampler 00025 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aLocator (including P&ID designator) is located on Permit Table [III.10.E.J](#) – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

Table III.10.E.F – LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
RLD-SUMP-00028 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00029 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00030 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00031 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00032 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00035 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00036 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
LVP-FD-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
Melter 1 Encasement Assembly Drain,	Not Applicable	Conductivity Cable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Melter 2 Encasement Assembly Drain,	Not Applicable	Conductivity Cable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ASX Sampler 00012 Lower	Not Applicable	Thermal Dispersion	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.E.F – LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters

Containment Drain		Level Switch							
ASX Sampler 00013 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED						

Footnotes:
^aLocator (including P&ID designator) is located on Permit Table [III.10.E.L](#) - LAW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

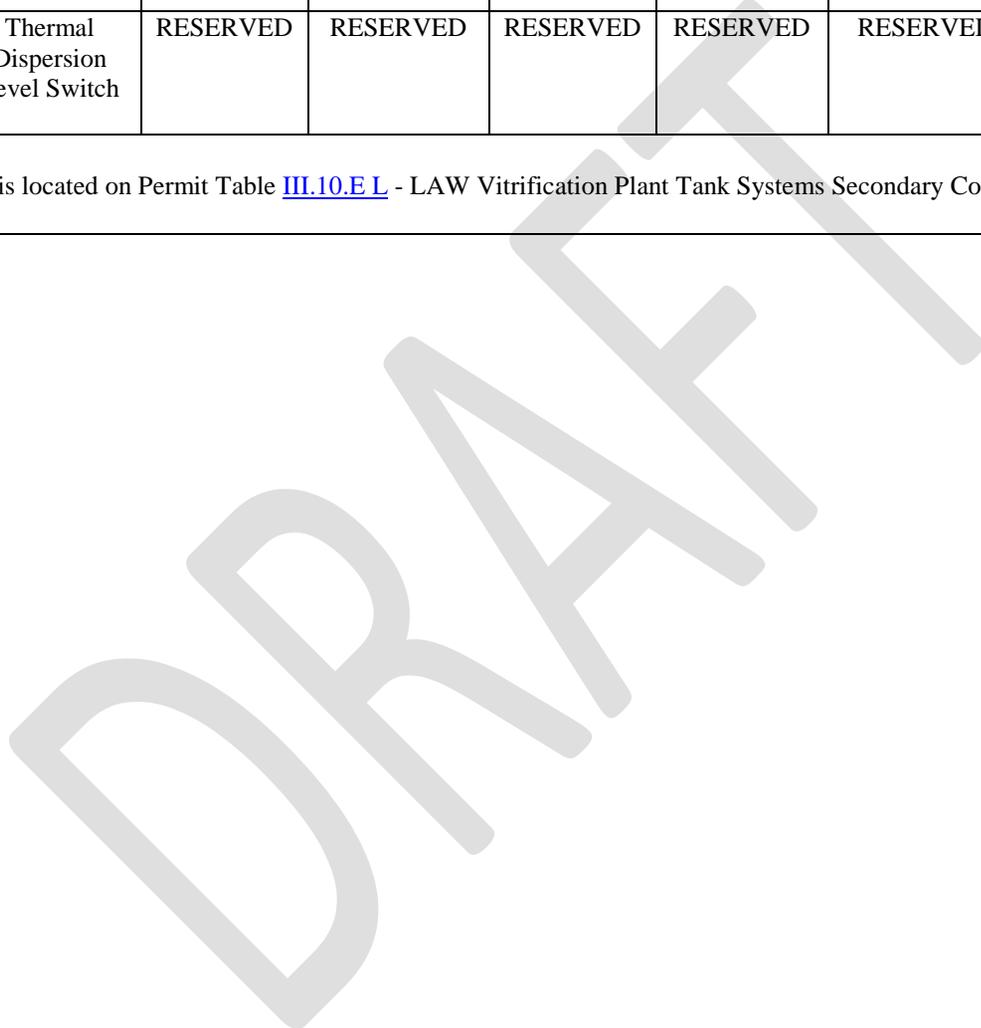


Table III.10.E.G - HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
HCP-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00005 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00003 ^a	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.G - HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters

HSH-SUMP-00007 ^a	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00009 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HPH-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HPH-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HPH-SUMP-00005 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
ASX Sampler 00028 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
ASX Sampler 00029 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
ASX Sampler 00042 Lower Containment Drain	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Footnotes:

^aLocator (including P&ID designator) is located on Permit Table [III.10.E.N](#) - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, and Floor Drains.

Table III.10.E.H – Laboratory Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
RLD-SUMP-00041 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00042 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043B ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00044 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00045 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00002 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00004 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00005 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00006 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00007 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Table III.10.E.H – Laboratory Tank System Process and Leak Detection System Instruments and Parameters

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
RLD-LDB-00008 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00009 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00011 ^a	Not Applicable	Thermal Dispersion Level Switch	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

Footnotes:

^aLocator (including P&ID designator) is located on Permit Table [III.10.E.P](#) - Laboratory Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

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Table III.10.E.I – Pretreatment Plant Tank Systems Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes:			
^a Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640 .			
^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-SUMP-00071 P-B005 (Pit-19, El. -19')	60	Dry Sump	30" Dia x 18" Deep Epoxy	<u>24590-PTF</u> -M6-PWD-00041, Rev 3 -P1-P01T-00006, Rev 4
PWD-SUMP-00040 P-B002 (Pit-45, El. -45')	233.7	Dry Sump	60"x30"x30" Stainless Steel	<u>24590-PTF</u> -M6-PWD-00012, Rev 2 -P1-P01T-00006, Rev 4
PWD-SUMP-00001 P-0108B (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00001A P-0108C (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00010, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00002	75	Dry Sump	30" Dia. By ~27" deep	<u>24590-PTF</u>

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
P-0108A (El. 0')			Stainless Steel	-M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00002A P-0108 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00010, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00003 P-0106 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00004 P-0104 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00005 P-0102A (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00006 P-0102 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00008, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00007 P-0109 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00008 P-0111 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00009 P-0112 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
				-P1-P01T-00001, Rev 7
PWD-SUMP-00010 P-0113 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00011 P-0114 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00012 P-0117 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00009, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00013 P-0117A (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00014, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00026 P-0123 (Hot Cell, El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00014, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00028 P-0123 (Hot Cell, El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00014, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00029 P-0123 (Hot Cell, El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00014, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00031 P-0119 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	<u>24590-PTF</u> -M6-PWD-00010, Rev 3 -P1-P01T-00001, Rev 7

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-SUMP-00032 P-0123A (Maintenance Cave, El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	24590-PTF -M6-PWD-00010, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00033 P-0123A (Maintenance Cave, El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	24590-PTF -M6-PWD-00010, Rev 3 -P1-P01T-00001, Rev 7
PWD-SUMP-00034 P-0121A (Spent Resin Dewatering, El. 0')	75	Dry Sump	30" Dia. x 27" Deep Stainless Steel	24590-PTF -M6-PWD-00012, Rev 2
PWD-SUMP-00035 P-0122A (Waste Packaging Area, El. 0')	75	Dry Sump	30" Dia. x 27" Deep Stainless Steel	24590-PTF -M6-PWD-00012, Rev 2
PWD-SUMP-00036 P-0118 (El. 0')	75	Dry Sump	30" Dia. By ~27" deep Stainless Steel	24590-PTF -M6-PWD-P0012, Rev 2 -P1-P01T-00001, Rev 7
PWD-SUMP-00037 P-0124A	7.5		30" Dia. x 27" Deep Stainless Steel	24590-PTF -M6-PWD-00012, Rev 2
RLD-SUMP-00003 P-0150 (Radioactive Liquid Waste Disposal Area, El. 0', outdoor)	583	Dry Sump	78" x 48" x 36" Deep Epoxy coating	24590-PTF -M6-RLD-00002, Rev 3
PVP-ZY-00037-S11B-03, P-0105 (PVP-BULGE-00001, El. 0')			3" Stainless Steel	PVP-00017002
PVP-ZY-00036-S11B-03, P-0101A (PVP-BULGE-00002, El. 0')			3" Stainless Steel	PVP-00018002

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
TCP-ZF-00032-S11B-03 Drain Line, P-0116 (TCP-BULGE-00004, El. 0')	N/A	N/A	3" Stainless Steel	24590-PTF -M6-TCP-00001002, Rev 0
<u>DIW-ZF-01511-S11B-03 Drain Line, P-0320 (DIW-BULGE-00001, El. 56')</u>	N/A	N/A	3" Stainless Steel	24590-PTF -M6-DIW-00004001
<u>DIW-ZF-01510-S11B-03, P-0320 Drain Line (DIW-BULGE-00002, El. 56')</u>	N/A	N/A	3" Stainless Steel	24590-PTF -M6-DIW-00004001
PWD-FD-00005 PWD-ZF-03000-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. Stainless Steel	24590-PTF -M6-PWD-00011, Rev 2
PWD-FD-00006 PWD-ZF-03001-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. Stainless Steel	24590-PTF -M6-PWD-00011, Rev 2
PWD-FD-00435 P-0105		NA	3" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00349 P-0105		NA	6" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00436 P-0105		NA	3" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00438 P-0105A		NA	6" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00348 P-0105A		NA	6" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00437 P-0105B		NA	3" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-347 P-0105B		NA	6" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-FD-346 P-0105C		NA	4" Dia. Stainless Steel	24590-PTF- -M6-PWD-00044, Rev 3
PWD-FD-00293 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00298 P-0425 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00309 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00310 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00311 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00312 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00376 P-0415 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00377 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00378 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00379 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00380 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00381 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00382 P-0415A Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00383 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00557 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-FD-00559 P-0430 Drain, El. 77'	665	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00561 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00563 P-0411 Drain, El. 77'	665	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00564 P-0411 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00565 P-0410 Drain, El. 77'	665	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00566 P-0410 Drain, El. 77'	665	N/A	8" Dia 304L	24590-PTF -M6-PWD-00043, Rev 3
PWD-FD-00571 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00572 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00573 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00574 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00575 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00576 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00583 P-0422A Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00584 P-0422A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00589 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00590 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-FD-00591 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00592 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00593 P-0423 Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00594 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00595 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00596 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00597 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00598 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00599 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00600 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00604 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00605 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00606 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00607 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00629 P-0425 Drain, El. 77'	655	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3
PWD-FD-00630 P-0425 Drain, El. 77'	140	N/A	8" Dia 304L	24590-PTF -M6-PWD-00044, Rev 3

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
CRP-ZF-00002-S11B-03, P-0317 Drain Line (CRP-BULGE-00001 drain, El. 56')	<u>N/A</u>	N/A	3" Stainless Steel	<u>24590-PTF</u> -M6-CRP-00003001, Rev 0
CXP-ZF-00012-S11B-03 Drain Line, P-0317 (CXP-BULGE-00004, El. 56')	N/A	N/A	3" Stainless Steel	<u>24590-PTF</u> -M6-CXP-00003003, Rev 0
UFP-ZF-00043-S11B-03 Drain Line, P-0301 (UFP-BULGE-00001, El. 56')	N/A	N/A	3" Stainless Steel	<u>24590-PTF</u> -M6-UFP-00016001, Rev 0
UFP-ZF-00042-S11B-03 Drain Line, P-0301 (UFP-BULGE-00002, El. 56')	N/A	N/A	3" Stainless Steel	<u>24590-PTF</u> -M6-UFP-00017001, Rev 0
UFP-ZY-00002-S11B-03 Drain Line, P-0311 (UFP-BULGE-00005, El. 56')	N/A	N/A	3" Stainless Steel	<u>24590-PTF</u> -M56-UFP-00031001, Rev 0
UFP-ZY-00001-S11B-03 Drain Line, P-0311A (UFP-BULGE-00006, El. 56')	N/A	N/A	3" Stainless Steel	<u>24590-PTF</u> -M6-UFP-00032001, Rev 0
PWD-LDB-00001 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00002 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00003 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-LDB-00004 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00005 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00006 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00007 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00008 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00009 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00010 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2
PWD-LDB-00011 P-B001 (Inter Facility	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00050, Rev 2

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
Transfer Line Tunnel, El. -45')				
PWD-LDB-00012 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00013 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00014 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00015 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00016 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00017 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
PWD-LDB-00018 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos. Specifications Nos. etc.)
PWD-LDB-00019 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00051, Rev 2
RLD-LDB-00012 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 34" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00058, Rev 4
RLD-LDB-00013 P-B001 (Inter Facility Transfer Line Tunnel, El. -45')	6	N/A	8" Dia. x 34" Length/ Stainless Steel	<u>24590-PTF</u> -M6-PWD-00058, Rev 4
ASX Sampler 00015 Lower Containment Trough/Dam (P-0311C, El. 56')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-PTF</u> -M6-PWD-00007, Rev 3
ASX Sampler 00017 Lower Containment Trough/Dam (P-0311B, El. 56')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-PTF</u> -M6-PWD-00007, Rev 3
ASX Sampler 00019 Lower Containment Trough/Dam (P-0302, El. 56')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-PTF</u> -M6-PWD-00007, Rev 3
ASX Sampler 00020 Lower Containment Trough/Dam (P-0301, El. 56')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-PTF</u> -M6-PWD-00007, Rev 3
ASX Sampler 00025 Lower Containment Trough/Dam (P-0307, El. 56')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-PTF</u> -M6-PWD-00007, Rev 3

Footnotes:

^aDimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

Note #1: These are special cases due to their location in equipment berms. The capacity for these drain lines is based on a unique bounding case for liquid spillage.

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Table III.10.E.K - LAW Vitrification Plant Tank Systems Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:
^a Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in [WAC-173-303-640](#).
^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

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Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00028 L-B001B (C3/C5 Drains/Sump Collection Vessel Cell, El. -21')	59	Dry Sump	24" Dia. By 30" deep Stainless Steel	<u>24590-LAW</u> -M6-RLD-00002001, Rev 0 -M6-RLD-00002002, Rev 0 -M6-RLD-00002003, Rev 0 -M6-RLD-00002004, Rev 0 -M6-RLD-00002005, Rev 0
RLD-SUMP-00029 L-0123 (Process Cell, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	<u>24590-LAW</u> -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8
RLD-SUMP-00030 L-0123 (Process Cell, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	<u>24590-LAW</u> -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0

Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
				-P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8
RLD-SUMP-00031 L-0124 Process Cell Sump, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	24590-LAW -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8
RLD-SUMP-00032 L-0124 (Process Cell, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	24590-LAW -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -P1-P01T-00010, Rev 8
RLD-SUMP-00035 L-0126 (Effluent Cell, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	24590-LAW -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8
RLD-SUMP-00036 L-0126 (Effluent Cell, El. +3')	30	Dry Sump	30" Dia. By 12" deep Stainless Steel	24590-LAW -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0 -P1-P01T-00002, Rev 5 -P1-P01T-00010, Rev 8
Drain Line ID# = RLD-FD- 00001 L-B001B (RLD-BULGE- 00001 Drain, El. -21')	N/A	N/A	2" Dia. 316L	24590-LAW -M6-RLD-00002001, Rev 0 -M6-RLD-00002002, Rev 0 -M6-RLD-00002003, Rev 0

Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
				-M6-RLD-00002004, Rev 0 -M6-RLD-00002005, Rev 0
Drain Line ID# = RLD-FD-00035 L-0126 (RLD-BULGE-0000-4 Drain El. +3')	N/A	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-RLD-00001001, Rev 0 -M6-RLD-00001002, Rev 0 -M6-RLD-00001003, Rev 0 -M6-RLD-00001004, Rev 0 -M6-RLD-00001005, Rev 0 -M6-RLD-00001006, Rev 0
Drain Line ID# = LOF-FD-00001 L-0123 (LOP-BULGE-00001 drain El. +3)	N/A	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-LOP-P0001, Rev 2
Drain Line ID# = LCP-FD-00001 L-0123 (LCP-BULGE-00001 Drain, El. +3')	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LCP-P0001, Rev 3
Drain Line ID# = LCP-FD-00002 L-0123 (LCP-BULGE-00002 Drain, El. +3')	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LCP-P0001, Rev 3
Drain Line ID# = RLD-WS-20037-S11B-01 L-0123 (Melter 1 Encasement Assembly Drain, El. +3')	N/A	N/A	1" Dia. 316L	<u>24590-LAW</u> -M6-LMP-00012, Rev 5
Drain Line ID# = LFP-FD-00001 L-0123 (LFP-BULGE-00001 Drain, El. +3)	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LFP-P0001, Rev 2

Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
Drain Line ID# = LOP-FD-00002 L-0124 (LOP-BULGE-00002 Drain, El. +3)	N/A	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-LOP-P0002, Rev 2
Drain Line ID# = LCP-FD-00003 L-0124 (LCP-BULGE-00003 Drain, El. +3)	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LCP-P0002, Rev 2
Drain Line ID# = LFP-FD-00002 L-0124 (LFP-BULGE-00002 Drain, El. +3)	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LFP-P0003, Rev 2
Drain Line ID# = RLD-WS-20033-S11B-01 L-0124 (Melter 2 Encasement Assembly Drain, El. +3')	N/A	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LMP-00042, Rev 5
LVP-FD-00001 L-0218 (Berm floor drain for LVP-TK-00001, El. 28')	N/A	N/A	4" Dia. 316L	<u>24590-LAW</u> -M6-LVP-P0002, Rev 3
RLD-FD-00025 L-0304F (Curb floor drain for LVP-TK-00001, El. 48')	N/A	N/A	4" Dia. 316L	<u>24590-LAW</u> -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0
ASX Sampler 00012 Lower Containment Trough/Dam (L-0301, El. 48')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-LAW</u> -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0

Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
ASX Sampler 00013 Lower Containment Trough/Dam (L-0301, El. 48')	N/A	N/A	3" Dia. Stainless Steel	24590-LAW -M6-RLD-00003001, Rev 0 -M6-RLD-00003002, Rev 0 -M6-RLD-00003003, Rev 0
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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Table III.10.E.M - HLW Vitrification Plant Tank Systems Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640 . ^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Autosamplers, and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
HCP-SUMP-00001 H-B014 (Wet Process Cell, El. -21')	75	Dry Sump	30" Dia. x 18" Deep Stainless Steel	24590-HLW -M6-RLD-00015, Rev 4 -P1-P01T-00001, Rev 9 -P1-P01T-00008, Rev 11

**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems,
Including Sumps, Autosamplers, and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type	Sump or Drain Line Dimensions^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00001 H-B014 (Wet Process Cell, El. -21')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-00015, Rev 4 -P1-P01T-00001, Rev 9
HOP-SUMP-00003 H-B021 (SBS Drain Collection Cell 1, El. -21')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-00015, Rev 4 -P1-P01T-00001, Rev 9
HOP-SUMP-00008 H-B005 (SBS Drain Collection Cell 2, El. -21)	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-20004, Rev 6 -P1-P01T-00001, Rev 9
HDH-SUMP-00001 H-B039B (Canister Rinse Tunnel, El. -16.5')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-00016, Rev 4 -P1-P01T-00001, Rev 9 -P1-P01T-00009, Rev 11
HDH-SUMP-00002 H-B039A (Canister Rinse Bogie Maintenance Room, El. -16')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-00016, Rev 4 -P1-P01T-00001, Rev 9
HDH-SUMP-00003 H-B035 (Canister Decon Cave, El. -16')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	24590-HLW -M6-RLD-00004, Rev 5 -P1-P01T-00001, Rev 9
HFP-SUMP-00002 H-0117 (Melter Cave 1, El. 5')	50	Dry Sump	20.5" X 20.5" X 16" Stainless Steel	24590-HLW -M6-RLD-00008, Rev 5 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11
HFP-SUMP-00005 H-0106 (Melter Cave 2 El. 5')	50	Dry Sump	20.5" X 20.5" X 16" Stainless Steel	24590-HLW -M6-RLD- 20005, Rev 6 -P1-P01T-00002, Rev 7
HSH-SUMP-00003 H-0117 (Melter Cave 1, El. 3')	50	Dry Sump	20.5" X 20.5" X 16" Stainless Steel	24590-HLW -M6-RLD-00008, Rev 5 -P1-P01T-00002, Rev 7 -P1-P01T-00009, Rev 11

**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems,
Including Sumps, Autosamplers, and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type	Sump or Drain Line Dimensions^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
HSH-SUMP-00007 H-0106 (Melter Cave 2, El. 3')	50	Dry Sump	20.5" X 20.5" X 16" Stainless Steel	<u>24590-HLW</u> -M6-RLD-20005, Rev 6 -P1-P01T-00002, Rev 7
HSH-SUMP-00008 H-310A (Melter 1 Equip. Decon. Pit Area, El. 0')	50	Dry Sump	30" X 24" X 16" Stainless Steel	<u>24590-HLW</u> -M6-RLD-00003, Rev 5 -P1-P01T-00002, Rev 7
HSH-SUMP-00009 H-0304A (Melter 2 Equip. Decon. Pit Area, El. 0')	50	Dry Sump	30" X 24" X 16" Stainless Steel	<u>24590-HLW</u> -M6-RLD-20003, Rev 5 -P1-P01T-00002, Rev 7
HPH-SUMP-00001 H-0136 (Canister Handling Cave, El. -3')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	<u>24590-HLW</u> -M6-RLD-00016, Rev 4
HPH-SUMP-00005 H-0136 (Canister Handling Cave, El. -3')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	<u>24590-HLW</u> -M6-RLD-00004, Rev 5
HPH-SUMP-00003 H-B032 (Pour Tunnel 1, El. - 21')	75	Dry Sump	30" Dia. X 18" Deep Stainless Steel	<u>24590-HLW</u> -M6-RLD-00016, Rev 4
RLD-ZF-03330-S11B-03 H-B021 (SBS Drain Collection Cell 1)	N/A	N/A	Line Size Pipe Dia 3" 316L Stainless Steel	<u>24590-HLW</u> -M6-RLD-00015, Rev 4
RLD-ZF-03447-S11B-03 H-B005 (SBS Drain Collection Cell 2)	N/A	N/A	Line Size Pipe Dia 3" 316L Stainless Steel	<u>24590-HLW</u> -M6-RLD-20004, Rev 6
RLD-FD-0186 H-0308 (Melter 1 - Active Services Cell, El. 37')	N/A	N/A	Line Size Pipe Dia 6" Stainless Steel	<u>24590-HLW</u> -M6-RLD-00015, Rev 4
RLD-FD-0187 H-0302 (Melter 2 - Active Services Cell, El. 37')	N/A	N/A	Line Size Pipe Dia 6" Stainless Steel	<u>24590-HLW</u> -M6-RLD-20004, Rev 6
ASX Sampler 00028 Lower Containment Trough/Dam	N/A	N/A	3" Dia. Stainless Steel	<u>24590-HLW</u> -M6-RLD-00002, Rev 3

**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems,
Including Sumps, Autosamplers, and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
(H-0305A, El. 37')				
ASX Sampler 00029 Lower Containment Trough/Dam (H-0315, El. 37')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-HLW</u> -M6-RLD-00002, Rev 3
ASX Sampler 00042 Lower Containment Trough/Dam (H-0318, El. 37')	N/A	N/A	3" Dia. Stainless Steel	<u>24590-HLW</u> -M6-RLD-00002, Rev 3
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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Table III.10.E.O – Laboratory Tank Systems Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640 . ^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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Table III.10.E.P – Laboratory Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, and Floor Drains

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00041 A-B003 (C3 Effluent Vessel Cell, EL. -18'7')	30	Dry	30" Dia. X ~13" Deep Stainless Steel	24590-LAB -M6-RLD-P0002, Rev 1 -P1-60-P0007, Rev 2
RLD-SUMP-00042 A-B004 (C5 Effluent Vessel Cell, EL. -19'2')	30	Dry	30" Dia. X ~13" Deep Stainless Steel	24590-LAB -M6-RLD-P0001, Rev 2 -P1-60-P0007, Rev 2
RLD-SUMP-00045 A-B002 (C3 Pump Pit Sump, EL -6'-81/2"LP)	1.56	Dry	2'-0" X 2'-6" X 1/2"	24590-LAB -M6-RLD-P0002, Rev 1 -P1-60-P0007, Rev 2
RLD-SUMP-00043A A-B007 (C5 Pump Pit Sump, EL -6'-7"LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" Stainless Steel	24590-LAB -M6-RLD-P0001, Rev 2 -P1-60-P0007, Rev 2
RLD-SUMP-00043B A-B005 (C5 Pump Pit Sump, EL -6'-7" LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" Stainless Steel	24590-LAB -M6-RLD-P0001, Rev 2 -P1-60-P0007, Rev 2
RLD-SUMP-00044 A-B006 (C5 Piping Pit Sump, EL -6'-7" LP)	1.56	Dry	2'-0" X 2'-6" X 1/2" Stainless Steel	24590-LAB -M6-RLD-P0001, Rev 2 -P1-60-P0007, Rev 2

**Table III.10.E.P – Laboratory Tank Systems Secondary Containment Systems,
Including Sumps, Leak Detection Boxes, and Floor Drains**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-WU-02207-S11E-04 A-B003, (C3 Effluent Vessel Cell)	N/A	N/A	4" Dia 316L	<u>24590-LAB</u> -M6-RLD-P0002, Rev 1
RLD-ZN-02203-S11E-04 A-B004, (C5 Effluent Vessel Cell)	N/A	N/A	4" Dia 316L	<u>24590-LAB</u> -M6-RLD-P0001, Rev 2
RLD-ZN-03393-S11E-04 A-B004, (C5 Effluent Vessel Cell)	N/A	N/A	4" Dia 316L	<u>24590-LAB</u> -M6-RLD-P0001, Rev 2
RLD-ZN-03394-S11E-04 A-B004, (C5 Effluent Vessel Cell)	N/A	N/A	4" Dia 316L	<u>24590-LAB</u> -M6-RLD-P0001, Rev 2
RLD-LDB-00002 A-B004 (C5 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0008, Rev 1
RLD-LDB-00004 A-B004 (C5 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0008, Rev 1
RLD-LDB-00005 A-B003 (C3 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0007, Rev 1
RLD-LDB-00006 A-B003 (C3 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0007, Rev 1
RLD-LDB-00007 A-B003 (C3 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0007, Rev 1
RLD-LDB-00008 A-B003 (C3 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0007, Rev 1

**Table III.10.E.P – Laboratory Tank Systems Secondary Containment Systems,
Including Sumps, Leak Detection Boxes, and Floor Drains**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-LDB-00009 A-B004 (C5 Effluent Vessel Cell, El. -10')	6	N/A	8" Dia. x 24" Length/ Stainless Steel	<u>24590-LAB</u> -M6-RLD-P0008, Rev 1
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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1 **III.10.F CONTAINMENT BUILDING UNITS**

2 **III.10.F.1 Containment Building Units and Storage Limits**

3 **III.10.F.1.a Approved Waste and Storage Limits**

4 **III.10.F.1.a.i** The Permittees may store and treat, in containment building units listed in Permit
5 Table [III.10.F.A](#), as modified by Permit Condition III.10.F.7.d.iv, all dangerous
6 and mixed waste listed in the Part A Forms, Operating Unit Group 10,
7 Addendum A of this Permit, except for those wastes outside the waste acceptance
8 criteria specified in the WAP, Operating Unit Group 10, Addendum B, as
9 approved pursuant to Permit Condition III.10.C.3. Total dangerous and mixed
10 waste storage at the containment building units will not exceed the sum of the
11 capacities in column 7 of Permit Table [III.10.F.A](#), as modified pursuant to Permit
12 Condition III.10.F.7.d.iv.

13 **III.10.F.1.a.ii** The Permittees may place and store dangerous and mixed waste only in the
14 containment building units listed in Permit Table [III.10.F.A](#), as modified
15 pursuant to Permit Condition III.10.F.7.d.iv, in accordance with Permit Condition
16 III.10.F, and in accordance with Operating Unit Group 10, Chapters 1.0 and 4.0,
17 and Operating Unit Group 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15,
18 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and
19 10.18 of this Permit, as approved pursuant to Permit Conditions III.10.F.7.c and
20 III.10.F.7.d. The Permittees will limit the volume of dangerous and mixed waste
21 to quantities specified for the individual areas listed in column 7 of Permit Table
22 [III.10.F.A](#), as modified pursuant to Permit Condition III.10.F.7.d.iv.

23 **III.10.F.1.b** The Permittees will manage any ignitable, reactive, or incompatible waste in these units
24 in accordance with [WAC 173-303-395](#)(1). Any containment building units specified in
25 Permit Table [III.10.F.A](#) in which ignitable, reactive, or incompatible waste are managed
26 will meet the requirements specified in [WAC 173-303-640](#)(9) and (10), in accordance
27 with [WAC 173-303-680](#)(2).

28 **III.10.F.1.c** The Permittees must maintain documentation in the operating record of the description
29 and quantity of dangerous waste in each containment building unit listed in Permit Table
30 [III.10.F.A](#), as modified pursuant to Permit Condition III.10.F.7.d.iv, in accordance with
31 [WAC 173-303-380](#).

32 **III.10.F.1.d** The Permittees will ensure all certifications required by specialists (e.g., qualified,
33 registered, professional engineer, etc.) use the following statement or equivalent pursuant
34 to Permit Condition III.10.C.10:

35 “I, (Insert Name), have (choose one or more of the following: overseen, supervised,
36 reviewed, and/or certified) a portion of the design or installation of a new containment
37 building unit or component located at (address), and owned/operated by (name(s)). My
38 duties were: (e.g., design engineer, etc.), for the following containment building unit
39 components (e.g., the venting piping, etc.), as required by the Resource Conservation and
40 Recovery Act (RCRA) regulation(s), namely, 40 CFR 264.1101(c)(2) in accordance with
41 [WAC 173-303-695](#).

42 “I certify under penalty of law that I have personally examined and am familiar with the
43 information submitted in this document and all attachments and that, based on my inquiry
44 of those individuals immediately responsible for obtaining the information, I believe that
45 the information is true, accurate, and complete. I am aware that there are significant
46 penalties for submitting false information, including the possibility of fine and
47 imprisonment.”

- 1 **III.10.F.2 Containment Building Unit Design and Construction**
- 2 **III.10.F.2.a** The Permittees will design and construct the containment building units identified in
3 Permit Table [III.10.F.A](#), as modified pursuant to Permit Condition III.10.F.7.d.iv, as
4 specified in Operating Unit Group 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15,
5 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of
6 this Permit, as approved in accordance with Permit Condition III.10.F.7.a and [WAC 173-](#)
7 [303-695](#).
- 8 **III.10.F.2.b** The Permittees will design and construct all applicable containment building units'
9 secondary containment systems for each unit listed in Permit Table [III.10.F.A](#), as
10 specified in Operating Unit Group 10, Appendices 8.4 through 8.9, 8.15, 9.4 through 9.9,
11 9.18, 10.4 through 10.9, and 10.18 of this Permit, as approved in accordance with Permit
12 Condition III.10.F.7.a and [WAC 173-303-695](#).
- 13 **III.10.F.2.c** Modifications to approved design plans and specifications, in Operating Unit Group 10,
14 Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18,
15 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this permit, for the containment
16 building units will be allowed only in accordance with Permit Conditions [III.10.C.2.e](#) and
17 III.10.C.2.f, or III.10.C.2.g, III.10.C.9.d, and III.10.C.9.e.
- 18 **III.10.F.3 Containment Building Unit Management Practices**
- 19 **III.10.F.3.a** The Permittees will manage all dangerous and mixed waste in containment building units
20 in accordance with procedures described in Operating Unit Group 10, Appendices 8.15,
21 9.18, 10.18 and Addendum C of this Permit, as approved pursuant to Permit Condition
22 III.10.F.7.d.iv.
- 23 **III.10.F.3.b** The Permittees will follow the description of operating procedures described in Operating
24 Unit Group 10, Appendices 8.15, 9.18, 10.18 and Addendum C, of this permit, as
25 approved pursuant to Permit Condition III.10.F.7.d.iv and Permit Condition III.10.F.3,
26 and as specified below:
- 27 **III.10.F.3.b.i** Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or
28 other deterioration that could cause dangerous and mixed waste to be released
29 from the primary barrier;
- 30 **III.10.F.3.b.ii** Maintain the level of stored/treated dangerous and mixed waste within the
31 containment building unit walls so that the height of the wall is not exceeded;
- 32 **III.10.F.3.b.iii** Take measures to prevent the tracking of dangerous and mixed waste out of the
33 unit by personnel or by equipment used in handling the waste. An area must be
34 designated to decontaminate equipment and any rinsate must be collected and
35 properly managed;
- 36 **III.10.F.3.b.iv** Maintain the containment building unit at all times to prevent the spread of
37 airborne dangerous and/or mixed waste contamination into less contaminated or
38 uncontaminated areas. All air pollution control devices for exhaust from
39 containment building unit must be properly maintained and operational when
40 storing or treating dangerous and mixed waste in the containment building units;
41 and,
- 42 **III.10.F.3.b.v** Collect and remove liquids and waste to minimize hydraulic head on the
43 containment system at the earliest practicable time.
- 44 **III.10.F.3.c** The Permittees will inspect the containment building units per requirements in the
45 Operating Unit Group 10, Addendum E1 of this permit, as approved pursuant to Permit
46 Condition [III.10.C.5](#), 40 CFR 264.1101(c)(4), in accordance with [WAC 173-303-695](#) and
47 [WAC 173-303-320](#) and record in the Facility's operating record, at least once every

1 seven (7) days, data gathered from monitoring equipment and leak detection equipment
2 as well as the containment building unit and area immediately surrounding the
3 containment building unit to detect signs of releases of dangerous and mixed waste.

4 **III.10.F.3.d** Throughout the active life of the containment building unit, if the Permittees detect a
5 condition that could lead to or has caused a release of dangerous and/or mixed waste, the
6 Permittees must repair the condition promptly, in accordance with the following
7 procedures:

8 **III.10.F.3.d.i** Upon detection of a condition that has lead to the release of dangerous and/or
9 mixed waste (e.g., upon detection of leakage from the primary barrier) the
10 Permittees must:

11 A. Enter a record of the discovery in the facility operating record;

12 B. Immediately remove the portion of the containment building unit affected
13 by the condition from service;

14 C. Determine what steps must be taken to repair the containment building unit,
15 remove any leakage from the secondary collection system, and establish a
16 schedule for accomplishing the cleanup and repairs; and

17 D. Within seven (7) days after the discovery of the condition, notify Ecology of
18 the condition, and within fourteen (14) working days, provide a written notice to
19 Ecology with a description of the steps taken to repair the containment building
20 unit, and the schedule for accomplishing the work.

21 **III.10.F.3.d.i.a** Ecology will review the information submitted, make a determination regarding
22 whether the containment building unit must be removed from service completely or
23 partially until repairs and cleanup are complete, and notify the Permittees of the
24 determination and underlying rationale in writing.

25 **III.10.F.3.d.i.b** Upon completing all repairs and cleanup the Permittees must notify Ecology in
26 writing and provide verification, signed by a qualified, registered, professional
27 engineer, that repairs have been completed according to the written notice submitted
28 in accordance with Permit Condition III.10.F.3.d.i.D.

29 **III.10.F.4 Inspections** [\[WAC 173-303-640\(6\)\]](#)

30 **III.10.F.4.a** The Permittees will inspect the containment building units in accordance with the
31 Inspection Schedules in Operating Unit Group 10, Addendum E of this Permit, as
32 modified pursuant to Permit Condition III.10.C.5.c.

33 **III.10.F.4.b** The inspection data for the containment building units will be recorded, and the records
34 will be placed in the WTP Unit operating record, in accordance with Permit Condition
35 III.10.C.4.

36 **III.10.F.5 Recordkeeping** [\[WAC 173-303-380\]](#)

37 For the containment building units, the Permittees will record and maintain in the WTP
38 Unit operating record all monitoring, calibration, recording, maintenance, test data, and
39 inspection data compiled under the conditions of this Permit, in accordance with Permit
40 Conditions III.10.C.4 and [III.10.C.5](#).

41 **III.10.F.6 Closure**

42 The Permittees will close the containment building units in accordance with Operating
43 Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition
44 III.10.C.8.

- 1 **III.10.F.7 Compliance Schedule**
- 2 **III.10.F.7.a** All information identified for submittal to Ecology in Permit Conditions III.10.F.7.b
3 through e. of this compliance schedule must be signed in accordance with requirements in
4 [WAC 173-303-810](#)(12), as modified in accordance with Permit Condition III.10.F.1.d
5 [[WAC 173-303-806](#)(4)].
- 6 **III.10.F.7.b** Prior to initial receipt of dangerous and/or mixed waste, the Permittees will submit to
7 Ecology a certification by a qualified, registered, professional engineer that the
8 containment building units design meets the requirements of Permit Conditions III.10.F.1
9 and III.10.F.2 in accordance with Permit Condition III.10.F.7.a. The certification will
10 also be stored in the WTP Unit operating record. For containment buildings units in
11 Permit Table [III.10.F.A](#), as modified pursuant to Permit Condition III.10.F.7.d.iv,
12 identified as allowed to manage free liquids, the certification will include an additional
13 demonstration that the containment building meets the requirements specified in 40 CFR
14 264.1101(b), in accordance with [WAC 173-303-695](#).
- 15 **III.10.F.7.c** The Permittees submit to Ecology pursuant to Permit Condition III.10.C.9.f, prior to
16 construction of the containment building unit containment system, and as appropriate,
17 leak detection system for each containment building unit (per level, per WTP Unit
18 building) as identified in Permit Condition III.10.F.1, Permit Table [III.10.F.A](#),
19 engineering information as specified below, for incorporation, as appropriate, into
20 Operating Unit Group 10, Appendices 8.1, 8.2, 8.3, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2,
21 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this
22 Permit. At a minimum, engineering information specified below will show the following
23 as required in accordance with [WAC 173-303-695](#) (the information specified below will
24 include dimensioned engineering drawings showing floors, walls, and ceilings/roof of the
25 containment building units and other information on floor drains and sumps):
- 26 **III.10.F.7.c.i** Design drawings (General Arrangement (GA) Drawings in plan and cross
27 sections) and specifications for the foundation, containment, including
28 liner/coating installation details and leak detection methodology, as appropriate
29 [40 CFR 264.1101(a)(1) and (b), in accordance with [WAC 173-303-695](#)];
- 30 **III.10.F.7.c.ii** The Permittees provide the design criteria (references to codes and standards,
31 load definitions and load combinations, materials of construction, and
32 analysis/design methodology) and typical design details for the support of the
33 containment system. This information demonstrate the foundation will be
34 capable of providing support to the secondary containment system, resistance to
35 pressure gradients above and below the system, and capable of preventing failure
36 due to settlement, compression, or uplift [40 CFR 264.1101(a)(2) in accordance
37 with [WAC 173-303-695](#)];
- 38 **III.10.F.7.c.iii** The Permittees provide documentation addressing how coatings will withstand
39 the movement of personnel, waste, and equipment during the operating life of the
40 containment building per 40 CFR 264.1101(a)(2), (a)(4), and (b) in accordance
41 with [WAC 173-303-695](#);
- 42 **III.10.F.7.c.iv** Containment/foundation and, as appropriate, for leak detection systems, materials
43 selection documentation (including, but not limited to, concrete coatings and
44 water stops, and liner materials as applicable [e.g. physical and chemical
45 tolerances]) [40 CFR 264.1101(a)(4) and (b) in accordance with [WAC 173-303-](#)
46 [695](#)];
- 47 **III.10.F.7.c.v** A detailed description of how the containment/foundation and, as appropriate,
48 leak detection systems, will be installed;

- 1 **III.10.F.7.c.vi** Submit Permit Tables [III.10.F.B](#) and [III.10.F.C](#), completed to provide for all
2 secondary containment sumps and floor drains, the information as specified in
3 each column heading, consistent with the information to be provided in i. through
4 viii.
- 5 **III.10.F.7.c.vii** A detailed description of how fugitive emissions will be controlled such that any
6 openings (e.g., doors, windows, vents, cracks, etc.) exhibit no visible emissions
7 [40 CFR 264.1101(c)(1)(iv) in accordance with [WAC 173-303-695](#)];
- 8 **III.10.F.7.c.viii** Prior to installation, the Permittees will submit coating vendor information
9 specific to containment buildings for incorporation into the Administrative
10 Record [40 CFR 264.1101(a)(4) and (b) in accordance with [WAC 173-303-695](#)];
- 11 **III.10.F.7.c.ix** Prior to installation, leak detection system documentation (e.g. vendor
12 information, etc.) consistent with information submitted under III.10.H.7.c.i.
13 above, will be submitted for incorporation into the Administrative Record;
- 14 **III.10.F.7.c.x** Prior to installation, the Permittees will submit leak detection system
15 instrumentation control logic narrative description (e.g., software functional
16 specifications, descriptions of fail-safe conditions, etc.); and,
- 17 **III.10.F.7.c.xi** Prior to installation, system descriptions related to leak detection systems will be
18 submitted for incorporation into the Administrative Record;
- 19 **III.10.F.7.c.xii** For leak detection system instrumentation for containment buildings as identified
20 in Permit Table [III.10.F.D](#), a detailed description of how the leak detection
21 system instrumentation will be installed and tested [40 CFR 264.1101(b)(3) in
22 accordance with [WAC 173-303-695](#)] will be submitted prior to installation.
23
24 Information pertaining to leak detection systems in Permit Conditions
25 III.10.F.7.c.ix through xii. Will be submitted pursuant to Permit Conditions
26 III.10.E.9.d.vii, viii, x, and xiii.
- 26 **III.10.F.7.d** Prior to initial receipt of dangerous and mixed waste, in the WTP Unit, the Permittees
27 will submit the following, as specified below, for incorporation into Operating Unit
28 Group 10. The information specified below into Operating Unit Group 10, and
29 incorporated pursuant to Permit Condition III.10.C.2.g will be followed:
- 30 **III.10.F.7.d.i** Registered Professional Engineer certification documentation consistent with the
31 information provided in III.10.F.7.b and III.10.F.7.c for incorporation in the
32 Administrative Record. The certification must be maintained in the WTP Unit
33 Operating Record [40 CFR 264.1101(c)(2)];
- 34 **III.10.F.7.d.ii** Updated Addendum C, Section 4.2.1, and the figures for containment building
35 units identified in Permit Table [III.10.F.A](#) (as modified pursuant to Permit
36 Condition III.10.F.7.d.iv, consistent with Operating Unit Group 10, Appendices
37 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1,
38 10.2, 10.4 through 10.10, 10.13, and 10.18, as approved pursuant Permit
39 Conditions III.10.F.7.a. through d);
- 40 **III.10.F.7.d.iii** Description of operating procedures demonstrating compliance with 40 CFR
41 264.1101(c) and (d) in accordance with [WAC 173-303-695](#);
- 42 **III.10.F.7.d.iv** Permit Table [III.10.F.A](#), amended as follows:
43
44 A. Under column 1, update and complete list of dangerous and mixed waste containment
45 building units including room location and number;
46
47 B. Under column 2, update unit dimensions;

- 1 C. Under column 3, replace the ‘Reserved’ with the Operating Unit Group 10,
2 Appendices 8.0, 9.0, and 10.0, subsections specific to containment building units as
3 listed in column 1;
- 4 D. Under column 4, update and complete list of narrative description, tables, and
5 figures;
- 6 E. Under column 5, replace the ‘Reserved’ to indicate if container storage is used in
7 each containment building units (Yes or No) consistent with Permit Table III.10.D.A
8 updated pursuant to Permit Condition III.10.D.10.d;
- 9 F. Under column 6, replace the ‘Reserved’ to indicate if tank storage is used in each
10 containment building units (Yes or No) consistent with Permit Tables [III. 10.E.A-D](#),
11 updated pursuant to Permit Condition III.10.E.9.e.vi;
- 12 G. Under column 7, replace the ‘Reserved’ with the maximum operating volume for
13 each containment building unit, to include the container storage capacity specified in
14 Permit Table III.10.D.A, tank capacity specified in Permit Tables [III. 10.E.A-D](#). and
15 update the total capacity for the containment building units; and,
- 16 H. Under column 8, update the status of each containment building unit.

17 **III.10.F.7.d.v**

18 Permit Table [III.10.F.D](#) will be completed for Containment Building leak
19 detection system instrumentation and parameters to provide the information as
20 specified in each column heading. Leak detection system monitors and
21 instruments for critical systems as specified in Operating Unit Group 10,
22 Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b will be
addressed.

23 **III.10.F.7.d.vi**

24 All information provided under Permit Condition III.10.F.7.d must be consistent
25 with information provided pursuant to Permit Conditions III.10.F.7.a through d,
26 as approved by Ecology.

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
Pretreatment Plant							
P-0123 Pretreatment Hot Cell Containment Building	350x51x52	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	Yes
Pretreatment Maintenance Containment Building							
PM0124 Hot Cell Crane Maintenance Mezzanine	27 x 51 x 33	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0121A Spent Resin Dewatering	28 × 18 × 28	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0122A Waste Packaging Area	26 × 51 × 28	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cell	55 × 51 × 52	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0124 C3 Workshop	(24 × 24 × 16) + (34 × 24 × 15)	RESERVED	Section 4.2.4; Table C-7; and	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.				
P-0124A C3 Workshop	(73 + 15 × 15) + (16 × 15 + 15)	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0125 Cask Lidding Airlock & Equipment Chase	24 × 20 × 28	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0125ACask Lidding Room	28 × 18 × 25	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0128A MSM Repair Area	24 × 18 × 28	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0128 MSM Testing Room	24 × 17 × 27	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
P-0223 Spent Filter Drum Handling Area Containment Building	54 x 18 x 26	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
P-0335 Filter Cave Containment Building	198 x 51 x 52	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0431A General Filter Rm	RESERVED	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
LAW Vitrification Plant							
L-0112 LAW LSM Gallery Containment Building	150x62x24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	Yes
ILAW Container Finishing Containment Building		RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
L-0109B Swabbing Area Line 2	21x15x24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Operating Unit Group 10, Addendum C of this Permit.				
L-0109C Decontamination Area Line 2	18×15×24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0109D Inert Fill Area Line 2	55×15×24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115B Swabbing Area Line 1	21×15×24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115C Decontamination Area Line 1	18×15×24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115D Inert Fill Area Line 1	55×15×24	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0109E Container/Monitoring/Export	19×18×14	RESERVED	Section 4.2.4; Table C-7;	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
Area			and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.				
L-0115E Container/Monitoring/Export Area	19x18x14	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0119B LAW Consumable Import/Export Containment Building	30x28x17	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	Yes
L-226A LAW C3 Workshop Containment Building	34x22x19	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
LAW Pour Cave Containment Building		RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave	16.5x20x23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Permit.				
L-B013C Melter 1 Pour Cave	16.5×20×23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B013B Melter 2 Pour Cave	16.5×20×23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B011C Melter 2 Pour Cave	16.5×20×23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B011B Future Melter 3 Pour Cave	16.5×20×23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B009B Future Melter 3 Pour Cave	16.5×20×23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
ILAW Buffer Container Containment Building		RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Operating Unit Group 10, Addendum C of this Permit.				
L-B025C Container Buffer Store	22x22x23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B025D Container Rework	22x14x23	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
HLW Vitrification Plant							
HLW Melter Cave 1 Containment Building: H-0117 Melter Cave 1 H-0116B Melter Cave 1 C3/C5 Airlock H-0310A Melter Cave 1 Equipment Decon Pit	75 x 32 x 54 24 x 25 x 54 20 x 9 x 10	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
HLW Melter Cave 2 Containment Building: H-0106 Melter Cave 2 H-0105B Melter Cave 2 C3/C5 Airlock H-0304A Melter Cave 2 Equipment Decon Pit	75 x 32 x 54 24 x 25 x 54 20 x 9 x 10	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
H-0136 IHLW Canister Handling Cave Containment Building	18 x 140 x 54	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10,	RESERVED	RESERVED	RESERVED	No

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Addendum C of this Permit.				
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	41 x 11 x 54	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
HLW C3 Workshop Containment Building: H-0311A C3 Workshop H-0311B MSM Maintenance Workshop	19 x 30 x 22 58 x 69 x 22	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
H-0104 HLW Filter Cave Containment Building	105 x 36 x 36	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
H-B032 HLW Pour Tunnel 1 Containment Building	85 x 11 x 30	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
H-B005A HLW Pour Tunnel2 Containment Building	85 x 11 x 30	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	No
HLW Waste Handling Area Containment Building: H-0410B E&I Room H-0411 Waste Handling Room	17 x 20 x 10 25 x 54 x 10	RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-2) of Operating Unit Group 10, Addendum C of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
HLW Drum Swabbing and Monitoring Area:		RESERVED	Section 4.2.4; Table C-7; and Fig. C1-59 (Sheets 1-	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.F.A – Containment Building Unit Description

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
H-0126A Crane Maintenance Room H-0126B Swabbing and Monitoring Room H-028 Cask Import/Export Room	15 x 20 x 31 30 x 18 x 31 15 x 45 x 43		2) of Operating Unit Group 10, Addendum C of this Permit.				
Footnotes: ^a Containment Building Units include associated process systems and equipment ^b Requirements pertaining to the containers in the Containment Building Units are specified in Section III.10.D of this Permit. ^c Requirements pertaining to the tanks in the Containment Building Units are specified in Section III.10.E of this Permit.							

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Table III.10.F.B – Containment Building Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Capacity (gallons)	Dimensions ^a (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Unit Description Drawings ^b
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640 . ^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).					

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Table III.10.F.C – Containment Building Secondary Containment Systems Including Sumps and Floor Drains

Sump or Drain Line I.D. & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications No.'s, etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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Table III.10.F.D – Containment Building Leak Detection System Instrumentation and Parameters

Containment Building Locator and Name (including P&ID)	Type of Leak Detection Instrument	Location of Leak Detection Instrument (Tag No.)	Leak Detection Instrument Range	Expected Range	Fail States	Leak Detection Instrument Accuracy	Leak Detection Instrument Calibration Method No. and Range
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes:							
^a Locator (including P&ID designator) is located on Permit Table III.10.F.C – Containment Building Secondary Containment Systems Including Sumps and Floor Drains.							

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1 **III.10.G PRETREATMENT PLANT MISCELLANEOUS UNIT SYSTEMS**

2 For purposes of Permit Section III.10.G, where reference is made to [WAC 173-303-640](#), the
3 following substitutions apply: substitute the terms “Pretreatment Plant Miscellaneous Unit
4 System(s)” for “tank system(s),” “miscellaneous unit(s)” for “tank(s),” “equipment” for “ancillary
5 equipment,” and “miscellaneous unit(s) or equipment of a Pretreatment Plant Miscellaneous Unit
6 System” for “component(s)” in accordance with [WAC 173-303-680](#).

7 **III.10.G.1 Approved Waste and Storage Limits**

8 **III.10.G.1.a** The Permittees may process, in the Pretreatment Plant Miscellaneous Unit Systems listed in Permit
9 Table [III.10.G.A](#), as approved/modified pursuant to Permit Condition III.10.G.10, all dangerous
10 and mixed waste listed in the Part A Forms, Operating Unit Group 10, Addendum A of this Permit,
11 and in accordance with in the WAP, Operating Unit Group 10, Addendum B of this Permit, as
12 approved pursuant to Permit Condition III.10.C.3. Total Pretreatment Plant Miscellaneous Unit
13 dangerous and mixed waste storage at the Facility will not exceed the limits specified in Permit
14 Table [III.10.G.A](#).

15 **III.10.G.1.b** The Permittees may process dangerous and mixed waste only in approved Pretreatment Plant
16 Miscellaneous Unit Systems listed in Permit Table [III.10.G.A](#) in accordance with Permit Section
17 III.10.G and in accordance with Operating Unit Group 10, Chapters 1.0 and 4.0 of this Permit, and
18 Operating Unit Group 10, Appendices 8.1 through 8.15 of this Permit, as approved pursuant to
19 Permit Conditions III.10.G.10.b. through e. The Permittees will limit the total volume of wastes to
20 quantities specified for the individual miscellaneous units listed in Permit Table [III.10.G.A](#).

21 **III.10.G.1.c** The Permittees will manage ignitable, and reactive, and incompatible waste in accordance with
22 [WAC 173-303-395](#)(1). Any Pretreatment Plant Miscellaneous Unit System specified in Permit
23 Tables [III.10.G.A](#) and III.10.G.B in which ignitable, reactive, or incompatible waste are managed
24 will meet the requirements specified in [WAC 173-303-640](#)(9) and (10), in accordance with [WAC](#)
25 [173-303-680](#).

26 **III.10.G.1.d** The Permittees will ensure all certifications required by specialists (e.g., independent, qualified,
27 registered professional engineer; independent corrosion expert; independent, qualified installation
28 inspector; etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10:

29 “I, (Insert Name), have (choose one or more of the following: overseen, supervised, reviewed,
30 and/or certified) a portion of the design or installation of a new miscellaneous unit system or
31 component located at (address), and owned/operated by (name(s)). My duties were: (e.g.,
32 installation inspector, testing for tightness, etc.), for the following miscellaneous unit system
33 components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations,
34 namely, [WAC 173-303-640](#)(3) (applicable paragraphs (i.e., (a) through (g)) in accordance with
35 [WAC 173-303-680](#)).

36 “I certify under penalty of law that I have personally examined and am familiar with the
37 information submitted in this document and all attachments and that, based on my inquiry of those
38 individuals immediately responsible for obtaining the information, I believe that the information is
39 true, accurate, and complete. I am aware that there are significant penalties for submitting false
40 information, including the possibility of fine and imprisonment.”

41 **III.10.G.1.e** In all future narrative permit submittals, the Permittees will include miscellaneous unit system
42 names with the unit designation (e.g., Waste Feed Evaporator Separator Vessels are designated
43 V11002A and V11002B, respectively).

- 1 **III.10.G.2** **Miscellaneous Unit Systems Design and Construction** [[WAC 173-303-640](#), in
2 accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-340](#)].
- 3 **III.10.G.2.a** The Permittees will construct the Pretreatment Plant Miscellaneous Unit Systems identified in
4 Permit Table [III.10.G.A](#), as specified in Operating Unit Group 10, Appendices 8.1 through 8.14 of
5 this Permit, as approved pursuant to Permit Conditions III.10.G.10.b, III.10.G.10.c, and
6 III.10.G.10.d.
- 7 **III.10.G.2.b** The Permittees will construct secondary containment systems for the Pretreatment Plant
8 Miscellaneous Unit Systems identified in Permit Tables III.10.G.A and III.10.G.B, as specified in
9 Operating Unit Group 10, Appendices 8.2 and 8.4 through 8.14 of this Permit, as approved pursuant
10 to Permit Conditions III.10.G.10.b, III.10.G.10.c, and III.10.G.10.d.
- 11 **III.10.G.2.c** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of this
12 Permit for the Pretreatment Plant Miscellaneous Unit Systems will be allowed only in accordance
13 with Permit Conditions [III.10.C.2.e](#) and [f](#), or III.10.C.2.g, III.10.C.9.d, e, and h.
- 14 **III.10.G.3** Miscellaneous Unit System Installation and Certification [[WAC 173-303-640](#), in accordance with
15 [WAC 173-303-680\(2\)](#) and (3), and [WAC 173-303-340](#)].
- 16 **III.10.G.3.a** The Permittees must ensure that proper handling procedures are adhered to in order to prevent
17 damage to Pretreatment Plant Miscellaneous Unit Systems during installation. Prior to covering,
18 enclosing, or placing a new Pretreatment Plant Miscellaneous Unit System(s) or component(s) in
19 use, an independent, qualified, installation inspector or an independent, qualified, registered
20 professional engineer, either of whom is trained and experienced in the proper installation of
21 similar systems or components, must inspect the system for the presence of any of the following
22 items:
- 23 **III.10.G.3.a.i** Weld breaks;
- 24 **III.10.G.3.a.ii** Punctures;
- 25 **III.10.G.3.a.iii** Scrapes of protective coatings;
- 26 **III.10.G.3.a.iv** Cracks;
- 27 **III.10.G.3.a.v** Corrosion;
- 28 **III.10.G.3.a.vi** Other structural damage or inadequate construction/installation; and,
- 29 **III.10.G.3.a.vii** All discrepancies must be remedied before the Pretreatment Plant Miscellaneous Unit
30 Systems are covered, enclosed, or placed in use [[WAC 173-303-640\(3\)\(c\)](#) in accordance
31 with [WAC 173-303-680\(2\)](#) and (3)].
- 32 **III.10.G.3.b** For Pretreatment Plant Miscellaneous Unit Systems or components that are placed underground and
33 that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous,
34 homogeneous substance. The backfill must be installed so that it is placed completely around the
35 miscellaneous unit and compacted to ensure that the miscellaneous unit and piping are fully and
36 uniformly supported [[WAC 173-303-640\(3\)\(d\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)].
- 37 **III.10.G.3.c** The Permittees must test for tightness all new Pretreatment Plant miscellaneous units and
38 equipment, prior to being covered, enclosed, or placed into use. If the Pretreatment Plant
39 Miscellaneous Unit Systems are found not to be tight, all repairs necessary to remedy the leak(s) in
40 the system must be performed prior to the Pretreatment Plant Miscellaneous Units Systems being
41 covered, enclosed, or placed in use [[WAC 173-303-640\(3\)\(e\)](#), in accordance with [WAC 173-303-
42 680\(2\)](#) and (3)].

- 1 **III.10.G.3.d** The Permittees must ensure Pretreatment Plant Miscellaneous Unit Systems equipment is supported
2 and protected against physical damage and excessive stress due to settlement, vibration, expansion,
3 or contraction [[WAC 173-303-640](#)(3)(f), in accordance with [WAC 173-303-680](#)(2) and (3)].
- 4 **III.10.G.3.e** The Permittees must provide the type and degree of corrosion protection recommended by an
5 independent corrosion expert, based on the information provided in Operating Unit Group 10,
6 Appendices 8.9 and 8.11 as approved pursuant to Permit Conditions III.10.G.10.b.i,
7 III.10.G.10.b.i.v, III.10.G.10.b.v, III.10.G.10.c.i, III.10.G.10.c.i.v, III.10.G.10.c.v, and
8 III.10.G.10.d.i, III.10.G.10.d.iv, III.10.G.10.d.v, or other corrosion protection if Ecology believes
9 other corrosion protection is necessary to ensure the integrity of the Pretreatment Plant
10 Miscellaneous Unit Systems during use of the Pretreatment Plant Miscellaneous Unit Systems. The
11 installation of a corrosion protection system that is field fabricated must be supervised by an
12 independent corrosion expert to ensure proper installation [[WAC 173-303-640](#)(3)(g), in accordance
13 with [WAC 173-303-680](#)(2) and (3)].
- 14 **III.10.G.3.f** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain,
15 and keep on file in the WTP Unit operating record, written statements by those persons required to
16 certify the design of the Pretreatment Plant Miscellaneous Unit Systems and supervise the
17 installation of the Pretreatment Plant Miscellaneous Unit Systems, as specified in [WAC 173-303-](#)
18 [640](#)(3)(b), (c), (d), (e), (f), and (g), in accordance with [WAC 173-303-680](#), attesting that each
19 Pretreatment Plant Miscellaneous Unit System and corresponding containment system listed in
20 Permit Tables [III.10.G.A](#) and III.10.G.B, as approved/modified pursuant to Permit Condition
21 III.10.G.10, were properly designed and installed, and that repairs, in accordance with [WAC 173-](#)
22 [303-640](#)(3)(c) and (e), were performed [[WAC 173-303-640](#)(3)(a), [WAC 173-303-640](#)(3)(h), in
23 accordance with [WAC 173-303-680](#)(3)].
- 24 **III.10.G.3.g** The independent Pretreatment Plant Miscellaneous Unit System installation inspection and
25 subsequent written statements will be certified in accordance with [WAC 173-303-810](#)(13)(a) as
26 modified pursuant to Permit Condition III.10.G.1.d, comply with all requirements of [WAC 173-](#)
27 [303-640](#)(3)(h), in accordance with [WAC 173-303-680](#), and will consider, but not be limited to, the
28 following miscellaneous unit system installation documentation:
- 29 **III.10.G.3.g.i** Field installation report with date of installation;
- 30 **III.10.G.3.g.ii** Approved welding procedures;
- 31 **III.10.G.3.g.iii** Welder qualifications and certification;
- 32 **III.10.G.3.g.iv** Hydro-test reports, as applicable, in accordance with the American Society of Mechanical
33 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum
34 Institute (API) Standard 620, or Standard 650 as applicable;
- 35 **III.10.G.3.g.v** Tester credentials;
- 36 **III.10.G.3.g.vi** Field inspector credentials;
- 37 **III.10.G.3.g.vii** Field inspector reports;
- 38 **III.10.G.3.g.viii** Field waiver reports; and,
- 39 **III.10.G.3.g.ix** Non-compliance reports and corrective action (including field waiver reports) and repair
40 reports.
- 41 **III.10.G.4** **Integrity Assessments** [[WAC 173-303-340](#) and [WAC 173-303-640](#), in accordance with
42 [WAC 173-303-680](#)(2) and (3)].
- 43 **III.10.G.4.a** The Permittees will ensure periodic integrity assessments are conducted on the Pretreatment Plant
44 Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as approved/modified pursuant to

1 Permit Condition III.10.G.10, over the term of this Permit in accordance with [WAC 173-303-](#)
2 [680](#)(2) and (3) as specified in [WAC 173-303-640](#)(3)(b), following the description of the integrity
3 assessment program and schedule in Operating Unit Group 10, Addendum E of this Permit, as
4 approved pursuant to Permit Conditions III.10.G.10.e.i and III.10.C.5.c. Results of the integrity
5 assessments will be included in the WTP Unit operating record until ten (10) years after post-
6 closure, or corrective action is complete and certified, whichever is later.

7 **III.10.G.4.b** The Permittees will address problems detected during Pretreatment Plant Miscellaneous Unit
8 Systems integrity assessments specified in Permit Condition III.10.G.4.a following the integrity
9 assessment program in Operating Unit Group 10, Addendum E of this Permit, as approved pursuant
10 to Permit Conditions III.10.G.10.e.i and III.10.C.5.c.

11 **III.10.G.4.c** The Permittees must immediately and safely remove from service any Pretreatment Plant
12 Miscellaneous Unit System or secondary containment system which through an integrity
13 assessment is found to be “unfit for use” as defined in [WAC 173-303-040](#), following Permit
14 Condition III.10.G.5.j.i through iv, and vi. The affected Pretreatment Plant Miscellaneous Unit or
15 secondary containment system must be either repaired or closed in accordance with Permit
16 Condition III.10.G.5.j.v [[WAC 173-303-640](#)(7)(e) and (f) and [WAC 173-303-640](#)(8), in accordance
17 with [WAC 173-303-680](#)(3)].

18 **III.10.G.5 Miscellaneous Unit Management Practices**

19 **III.10.G.5.a** No dangerous and/or mixed waste will be managed in the Pretreatment Plant Miscellaneous Unit
20 Systems unless the operating conditions, specified under Permit Condition III.10.G.5, are complied
21 with.

22 **III.10.G.5.b** The Permittees will install and test all process and leak detection system
23 monitoring/instrumentation, as specified in Permit Table [III.10.G.C](#), as approved/modified pursuant
24 to Permit Condition III.10.G.10, in accordance with Operating Unit Group 10, Appendices 8.1, 8.2,
25 and 8.14 of this Permit, as approved pursuant to Permit Condition III.10.G.10.d.x.

26 **III.10.G.5.c** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials
27 in the Pretreatment Plant Miscellaneous Unit Systems if these substances could cause the systems
28 to rupture, leak, corrode, or otherwise fail [[WAC 173-303-640](#)(5)(a), in accordance with [WAC 173-](#)
29 [303-680](#)(2)].

30 **III.10.G.5.d** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems to prevent spills
31 and overflows using the description of controls and practices, as required under [WAC 173-303-](#)
32 [640](#)(5)(b), described in Permit Condition [III.10.C.5](#), and Operating Unit Group 10, Appendix 8.15
33 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e.iv. [[WAC 173-303-](#)
34 [640](#)(5)(b), in accordance with [WAC 173-303-680](#)(2) and (3) and [WAC 173-303-806](#)(4)(c)(ix)].

35 **III.10.G.5.e** For routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems, as specified in
36 Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition
37 III.10.G.10.e.vi, the Permittees will mark all routinely non-accessible Pretreatment Plant
38 Miscellaneous Unit System access points with labels or signs to identify the waste contained in the
39 units. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a
40 legend which identifies the waste in a manner which adequately warns employees, emergency
41 response personnel, and the public of the major risk(s) associated with the waste being stored or
42 treated in the miscellaneous unit system(s). For the purposes of this Permit condition, “routinely
43 non-accessible” means personnel are unable to enter these areas while waste is being managed in
44 them [[WAC 173-303-640](#)(5)(d), in accordance with [WAC 173-303-680](#)(2)].

45 **III.10.G.5.f** For all Pretreatment Plant Miscellaneous Unit Systems not addressed in Permit Condition
46 III.10.G.5.e, the Permittees will mark all these miscellaneous unit systems holding dangerous
47 and/or mixed waste with labels or signs to identify the waste contained in the unit. The labels, or

1 sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies
2 the waste in a manner which adequately warns employees, emergency response personnel, and the
3 public of the major risk(s) associated with the waste being stored or treated in the miscellaneous
4 unit system(s) [[WAC 173-303-640\(5\)\(d\)](#)], in accordance with [WAC 173-303-680\(2\)](#)].

5 **III.10.G.5.g** The Permittees will ensure that the secondary containment systems for Pretreatment Plant
6 Miscellaneous Unit Systems listed in Permit Tables [III.10.G.A](#) and III.10.G.B, as
7 approved/modified pursuant to Permit Condition III.10.G.10, are free of cracks or gaps to prevent
8 any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil,
9 ground water, or surface water at any time waste is in the Pretreatment Plant Miscellaneous Units
10 System. Any indication that a crack or gap may exist in the containment systems will be
11 investigated and repaired in accordance with Operating Unit Group 10, Appendix 8.15 of this
12 Permit, as approved pursuant to Permit Condition III.10.G.10.e.v. [[WAC 173-303-640\(4\)\(b\)\(i\)](#)],
13 [WAC 173-303-640\(4\)\(e\)\(i\)\(C\)](#), and [WAC 173-303-640\(6\)](#) in accordance with [WAC 173-303-](#)
14 [680\(2\)](#) and (3), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-320](#)].

15 **III.10.G.5.h** An impermeable coating, as specified in Operating Unit Group 10, Appendices 8.4, 8.5, 8.7, 8.9,
16 8.11, and 8.12 of this Permit, as approved pursuant to Permit Condition III.10.G.10.b.v of this
17 Permit, will be maintained for all concrete containment systems and concrete portions of
18 containment systems for each Pretreatment Plant Miscellaneous Unit System listed in Permit Tables
19 [III.10.G.A](#) and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10 [concrete
20 containment systems that do not have a liner pursuant to [WAC 173-303-640\(4\)\(e\)\(i\)](#), in accordance
21 with [WAC 173-303-680\(2\)](#), and have construction joints, will meet the requirements of [WAC 173-](#)
22 [303-640\(4\)\(e\)\(ii\)\(C\)](#), in accordance with [WAC 173-303-680\(2\)](#)]. The coating will prevent
23 migration of any dangerous and mixed waste into the concrete. All coatings will meet the
24 following performance standards:

25 **III.10.G.5.h.i** The coating must seal the containment surface such that no cracks, seams, or other avenues
26 through which liquid could migrate are present;

27 **III.10.G.5.h.ii** The coating must be of adequate thickness and strength to withstand the normal operation
28 of equipment and personnel within the given area such that degradation or physical damage
29 to the coating or lining can be identified and remedied before dangerous and mixed waste
30 could migrate from the system; and

31 **III.10.G.5.h.iii** The coating must be compatible with the dangerous and mixed waste, treatment reagents,
32 or other materials managed in the containment system [[WAC 173-303-640\(4\)\(e\)\(ii\)\(D\)](#)], in
33 accordance with [WAC 173-303-680\(2\)](#) and (3) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)].

34 **III.10.G.5.i** The Permittees will inspect all secondary containment systems for the Pretreatment Plant
35 Miscellaneous Unit Systems listed in Permit Tables [III.10.G.A](#) and III.10.G.B, as
36 approved/modified pursuant to Permit Condition III.10.G.10, in accordance with the Inspection
37 Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant
38 to Permit Conditions III.10.G.10.e.i and III.10.C.5.c, and take the following actions if a leak or spill
39 of dangerous and/or mixed waste is detected in these containment systems [[WAC 173-303-](#)
40 [640\(5\)\(c\)](#) and [WAC 173-303-640\(6\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and (3), [WAC 173-](#)
41 [303-320](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)]:

42 **III.10.G.5.i.i** Immediately and safely stop the flow of dangerous and/or mixed waste into the
43 miscellaneous unit system or secondary containment system;

44 **III.10.G.5.i.ii** Determine the source of the dangerous and/or mixed waste;

45 **III.10.G.5.i.iii** Remove the waste from the containment area in accordance with [WAC 173-303-680\(2\)](#) and
46 (3), as specified in [WAC 173-303-640\(7\)\(b\)](#). The dangerous and/or mixed waste removed

- 1 from containment areas of miscellaneous unit systems will be, as a minimum, managed as
2 dangerous and/or mixed waste;
- 3 **III.10.G.5.i.iv** If the cause of the release was a spill that has not damaged the integrity of the
4 miscellaneous unit system, the Permittees may return the miscellaneous unit system to
5 service in accordance with [WAC 173-303-680](#)(2) and (3), as specified in [WAC 173-303-](#)
6 [640](#)(7)(e)(ii). In such a case, the Permittees will take action to ensure the incident that
7 caused liquid to enter the containment system will not reoccur [[WAC 173-303-320](#)(3)];
8 and,
- 9 **III.10.G.5.i.v** If the source of the dangerous and/or mixed waste is determined to be a leak from the
10 primary Pretreatment Plant Miscellaneous Unit System into the secondary containment
11 system, or the system is unfit for use as determined through an integrity assessment or other
12 inspection, the Permittees must comply with the requirements of [WAC 173-303-640](#)(7),
13 and take the following actions:
- 14 A Close the miscellaneous unit following procedures in [WAC 173-303-640](#)(7)(e)(i) and
15 in accordance with [WAC 173-303-680](#), and Operating Unit Group 10, Addendum H of this
16 Permit, as approved pursuant to Permit Condition III.10.C.8; or
- 17 B. Repair and re-certify (in accordance with [WAC 173-303-810](#)(13)(a), as modified
18 pursuant to Permit Condition III.10.G.1.d) the Pretreatment Plant Miscellaneous Unit
19 System in accordance with Operating Unit Group 10, Appendix 8.15 of this Permit, as
20 approved pursuant to Permit Condition III.10.G.10.e.v before the Pretreatment Plant
21 Miscellaneous Unit System is placed back into service [[WAC 173-303-640](#)(7)(e)(iii) and
22 [WAC 173-303-640](#)(7)(f), in accordance with [WAC 173-303-680](#)].
- 23 **III.10.G.5.i.vi** The Permittees will document, in the operating record, actions/procedures taken to comply
24 with i. through v. above, as specified in [WAC 173-303-640](#)(6)(d) and in accordance with
25 [WAC 173-303-680](#)(2) and (3).
- 26 **III.10.G.5.i.vii** In accordance with [WAC 173-303-680](#)(2) and (3), the Permittees will notify and report
27 releases to the environment to Ecology as specified in [WAC 173-303-640](#)(7)(d).
- 28 **III.10.G.5.j** If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from
29 damaged or broken pipes) cannot be removed from the secondary containment system within
30 twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of
31 discovery. The notification will provide the information in A., B., and C. listed below. The
32 Permittees will provide Ecology with a written demonstration, within seven (7) business days,
33 identifying at a minimum [[WAC 173-303-640](#)(4)(c)(iv) and [WAC 173-303-640](#)(7)(b)(ii), in
34 accordance with [WAC 173-303-680](#)(3) and [WAC 173-303-806](#)(4)(i)(i)(B)]:
- 35 A. Reasons for delayed removal;
- 36 B. Measures implemented to ensure continued protection of human health and the environment;
37 and
- 38 C. Current actions being taken to remove liquids from secondary containment.
- 39 **III.10.G.5.k** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in accordance with
40 Operating Unit Group 10, Addendum C as updated pursuant to Permit Condition III.10.G.10.e.vi
41 and Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e, and the
42 following:
- 43 **III.10.G.5.k.i** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in order to
44 maintain the systems and process parameters listed in Permit Table [III.10.G.C](#) as
45 approved/modified pursuant to Permit Condition III.10.G.10, within the operating trips and
46 operating ranges specified in Permit Table [III.10.G.C](#), and consistent with assumptions and

- 1 basis which are reflected in Operating Unit Group 10, Appendix 6.3.1, as approved
2 pursuant to Permit Condition III.10.C.11.b [[WAC 173-303-815](#)(2)(b)(ii) and [WAC 173-](#)
3 [303-680](#)(2) and (3)]. For the purposes of this Permit Condition, Operating Unit Group 10,
4 Appendix 6.3.1. will be superseded by Appendix 6.4.1. upon its approval pursuant to either
5 Permit Conditions III.10.C.11.c or III.10.C.11.d.
- 6 **III.10.G.5.k.ii** The Permittees will calibrate/function test the instruments listed in Permit Table [III.10.G.C](#),
7 in accordance with Operating Unit Group 10, Appendix 8.15, as approved pursuant to
8 Permit Condition III.10.G.10.e.xii.
- 9 **III.10.G.5.l** For any portion of the Pretreatment Plant Miscellaneous Unit Systems which have the potential for
10 formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain
11 hydrogen levels below the (LEL) [[WAC 173-303-815](#)(2)(b)(ii)].
- 12 **III.10.G.5.m** For each miscellaneous unit holding dangerous waste which are acutely or chronically toxic by
13 inhalation, the Permittees will operate the system to prevent escape of vapors, fumes, or other
14 emissions into the air [[WAC 173-303-806](#)(4)(i)(i)(B) and [WAC 173-303-640](#)(5)(e), in accordance
15 with [WAC 173-303-680](#)].
- 16 **III.10.G.6 Air Emissions**
- 17 **III.10.G.6.a** Treatment effectiveness, feed-rates, and operating rates for dangerous and mixed waste systems and
18 sub-systems contained in the Pretreatment Plant (as specified in Permit Tables [III.10.E.A](#),
19 [III.10.F.A](#), and [III.10.G.A](#), as approved/modified pursuant to Permit Conditions III.10.E.9,
20 III.10.F.5, III.10.G.10, respectively) will be as specified in Permit Sections III.10.E, III.10.F, and
21 III.10.G, and consistent with the assumptions and basis reflected in Operating Unit Group 10,
22 Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the
23 purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by
24 Appendix 6.4.1, upon its approval, pursuant to either Permit Condition III.10.C.11.c or
25 III.10.C.11.d [[WAC 173-303-680](#)(2) and (3), and [WAC 173-303-815](#)(2)(b)(ii)].
- 26 **III.10.G.6.b** Compliance with Permit Condition III.10.G.6.a of this Permit will be regarded as operating within
27 the emission limits specified in Permit Table [III.10.G.D](#), as approved pursuant to Permit Conditions
28 III.10.C.11.b, III.10.C.11.c, or III.10.C.11.d of this Permit.
- 29 **III.10.G.6.c** All air pollution control devices and capture systems in the Pretreatment Plant Miscellaneous Unit
30 Systems will be maintained and operated at all times in a manner so as to minimize the emissions of
31 air contaminants and to minimize process upsets. Procedures for ensuring that the above equipment
32 is properly operated and maintained so as to minimize the emission of air contaminants and process
33 upsets will be established.
- 34 **III.10.G.6.d** The Permittees will ensure that for all dangerous and/or mixed waste areas, systems, and units
35 contained in the Pretreatment Plant (as specified in Permit Tables [III.10.E.A](#), [III.10.F.A](#), and
36 [III.10.G.A](#), as approved pursuant to Permit Conditions III.10.E.9.e.xii, III.10.F.7.d.iv, and
37 III.10.G.10.e.ix, respectively), the Pretreatment Vessel Vent Process System specified in Permit
38 Table [III.10.G.A.i](#) will be in operation prior to waste being introduced into these dangerous and/or
39 mixed waste areas, systems, and units contained in the Pretreatment Building. At any time the
40 Pretreatment Vessel Vent Process System ceases to operate or produces insufficient vacuum to
41 recover emissions from the areas, systems, or units, the Permittees will not commence new
42 treatment activities within the dangerous and mixed waste areas, systems, or units contained in the
43 Pretreatment Building, and take measures to minimize evolution of emissions from on-going
44 treatment, and will not receive new dangerous and/or mixed waste shipments into the Pretreatment
45 Building. The Permittees will not re-commence new treatment activities until the Pretreatment
46 Vessel Vent Process System is operational and producing sufficient vacuum to recover emissions.
- 47 **III.10.G.7 Inspections [[WAC 173-303-680](#)(3)]**

- 1 **III.10.G.7.a** The Permittees will inspect the Pretreatment Plant Miscellaneous Unit Systems in accordance with
2 the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in
3 accordance with Permit Condition III.10.C.5.c.
- 4 **III.10.G.7.b** The inspection data for Pretreatment Plant Miscellaneous Unit Systems will be recorded, and the
5 records will be placed in the WTP Unit operating record for the Pretreatment Plant Miscellaneous
6 Unit Systems, in accordance with Permit Condition III.10.C.4.
- 7 **III.10.G.8 Recordkeeping**
- 8 The Permittees will record and maintain in the WTP Unit operating record for the Pretreatment
9 Plant Miscellaneous Unit Systems, all monitoring, calibration, maintenance, test data, and
10 inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions
11 III.10.C.4 and [III.10.C.5](#).
- 12 **III.10.G.9 Closure**
- 13 The Permittees will close the Pretreatment Plant Miscellaneous Unit Systems in accordance with
14 Operating Unit Group 10, Addendum H, as approved pursuant to Permit Condition III.10.C.8.
- 15 **III.10.G.10 Compliance Schedule**
- 16 **III.10.G.10.a** All information identified for submittal to Ecology in a. through e. of this compliance schedule
17 must be signed and certified in accordance with requirements in [WAC 173-303-810](#)(12), as
18 modified in accordance with Permit Condition III.10.G.1.d [[WAC 173-303-806](#)(4)].
- 19 **III.10.G.10.b** The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f](#), prior to
20 construction of each secondary containment and leak detection system for the Pretreatment Plant
21 Miscellaneous Unit Systems (per level) as identified in Permit Tables [III.10.G.A](#) and [III.10.G.B](#),
22 engineering information as specified below, for incorporation into Operating Unit Group 10,
23 Appendices 8.2, 8.4, 8.5, 8.7, 8.8, 8.9, 8.11, and 8.12 of this Permit. At a minimum, engineering
24 information specified below will show the following as described in [WAC 173-303-640](#), in
25 accordance with [WAC 173-303-680](#) (the information specified below will include dimensioned
26 engineering drawings and information on sumps and floor drains):
- 27 **III.10.G.10.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system)
28 will include review of design drawings, calculations, and other information on which the
29 certification report is based and will include as applicable, but not limited to, review of
30 such information described below. Information (drawings, specifications, etc.) already
31 included in Operating Unit Group 10, Appendix 8.0 of this Permit may be included in the
32 report by reference and should include drawing and document numbers. IQRPE Reports
33 will be consistent with the information separately provided in ii through ix below [[WAC](#)
34 [173-303-640](#)(3)(a), in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
35 [806](#)(4)(i)(i)];
- 36 **III.10.G.10.b.ii** Design drawings (GA Drawings, in plan and cross sections) and specifications for the
37 foundation, secondary containment, including liner installation details, and leak detection
38 methodology [Note: leak detection systems for areas where daily, direct, or remote visual
39 inspection is not feasible, will be continuous in accordance with [WAC 173-303-](#)
40 [640](#)(4)(e)(iii)(C)]. These items should show the dimensions, volume calculations, and
41 location of the secondary containment system, and should include items such as floor/pipe
42 slopes to sumps, tanks, floor drains [[WAC 173-303-640](#)(4)(b) through (f) and [WAC 173-](#)
43 [303-640](#)(3)(a), in accordance with [WAC 173-303-680](#) and [WAC 173-303-806](#)(4)(i)(i)];
- 44 **III.10.G.10.b.iii** The Permittees will provide the design criteria (references to codes and standards, load
45 definitions, and load combinations, materials of construction, and analysis/design
46 methodology) and typical design details for the support of the secondary containment

- 1 system. This information will demonstrate the foundation will be capable of providing
2 support to the secondary containment system, resistance to pressure gradients above and
3 below the system, and capable of preventing failure due to settlement, compression, or
4 uplift [[WAC 173-303-640\(4\)\(c\)\(ii\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and [WAC](#)
5 [173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 6 **III.10.G.10.b.iv** A description of materials and equipment used to provide corrosion protection for external
7 metal components in contact with soil, including factors affecting the potential for
8 corrosion [[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#)], in accordance with [WAC 173-303-680](#) and
9 [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 10 **III.10.G.10.b.v** Secondary containment/foundation and leak detection systems materials selection
11 documentation (including, but not limited to, concrete coatings and water stops, and liner
12 materials), as applicable [[WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 13 **III.10.G.10.b.vi** Detailed description of how the secondary containment for each miscellaneous unit system
14 will be installed in compliance with [WAC 173-303-640\(3\)\(c\)](#), in accordance with [WAC](#)
15 [173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B);
- 16 **III.10.G.10.b.vii** Submit Permit Table III.10.G.B completed to provide for all secondary containment sumps
17 and floor drains, the information as specified in each column heading, consistent with
18 information to be provided in i through vi above;
- 19 **III.10.G.10.b.viii** Documentation that secondary containment and leak detection systems will not accumulate
20 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
21 [173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)]; and,
- 22 **III.10.G.10.b.ix** A detailed description of how miscellaneous unit design provides access for conducting
23 future miscellaneous unit integrity assessments [[WAC 173-303-640\(3\)\(b\)](#) and [WAC 173-](#)
24 [303-806\(4\)\(i\)\(i\)\(B\)](#)].
- 25 **III.10.G.10.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
26 installation of each Pretreatment Plant Miscellaneous Unit System as identified in Permit Tables
27 [III.10.G.A](#) and III.10.G.B, engineering information as specified below, for incorporation into
28 Operating Unit Group 10, Appendix 8.1 through 8.14 of this Permit. At a minimum, engineering
29 information specified below will show the following as required pursuant to [WAC 173-303-640](#)
30 and in accordance with [WAC 173-303-680](#) (the information specified below will include
31 dimensioned engineering drawings):
- 32 **III.10.G.10.c.i** IQRPE Reports (specific to miscellaneous unit) will include review of design drawings,
33 calculations, and other information on which the certification report is based and will
34 include as applicable, but not limited to, review of such information described below.
35 Information (drawings, specifications, etc.) already included in Operating Unit Group 10,
36 Appendix 8.0 of this Permit may be included in the report by reference and should include
37 drawing and document numbers. The IQRPE Reports will be consistent with the
38 information separately provided in ii through xi below and the IQRPE Report specified in
39 Permit Condition III.10.G.10.b.i [[WAC 173-303-640\(3\)\(a\)](#)], in accordance with [WAC 173-](#)
40 [303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 41 **III.10.G.10.c.ii** Design drawings (General Arrangement Drawings in plan and cross sections, Process Flow
42 Diagrams, P&IDs [including pressure control systems], and Mechanical Drawings) and
43 specifications, and other information specific to miscellaneous units (to show location and
44 physical attributes of each miscellaneous unit), [[WAC 173-303-640\(3\)\(a\)](#)], in accordance
45 with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];

- 1 **III.10.G.10.c.iii** Miscellaneous unit design criteria (references to codes and standards, load definitions, and
2 load combinations, materials of construction, and analysis/design methodology) and typical
3 design details for the support of the miscellaneous unit(s). Structural support calculations
4 specific to off-specification, non-standard, and field fabricated miscellaneous units will be
5 submitted for incorporation into the Administrative Record [[WAC 173-303-640](#)(3)(a), in
6 accordance with [WAC 173-303-680](#)(2) and [WAC 173-303-806](#)(4)(i)(i)(B)];
- 7 **III.10.G.10.c.iv** A description of materials and equipment used to provide corrosion protection for external
8 metal components in contact with water, including factors affecting the potential for
9 corrosion [[WAC 173-303-640](#)(3)(a)(iii)(B), in accordance with [WAC 173-303-680](#)(2) and
10 [WAC 173-303-806](#)(4)(i)(i)(A) through (B)];
- 11 **III.10.G.10.c.v** Miscellaneous unit materials selection documentation (e.g., physical and chemical
12 tolerances) [[WAC 173-303-640](#)(3)(a), in accordance with [WAC 173-303-680](#)(2) and [WAC](#)
13 [173-303-806](#)(4)(i)(i)(A)];
- 14 **III.10.G.10.c.vi** Miscellaneous unit vendor information (including, but not limited to, required performance
15 warranties, as available), consistent with information submitted under ii above, will be
16 submitted for incorporation into the Administrative Record [[WAC 173-303-640](#)(3)(a), in
17 accordance with [WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(A) through (B), and
18 [WAC 173-303-806](#)(4)(i)(v)];
- 19 **III.10.G.10.c.vii** System Description related to miscellaneous units will be submitted for incorporation into
20 the Administrative Record [[WAC 173-303-680](#), [WAC 173-303-806](#)(4)(i)(i)(A) through
21 (B), and [WAC 173-303-806](#)(4)(i)(v)].
- 22 **III.10.G.10.c.viii** Mass and energy balance for normal projected operating conditions used in developing the
23 P&IDs and the PFD, including assumptions and formulas used to complete the mass and
24 energy balance, so that they can be independently verified for incorporation into the
25 Administrative Record [[WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(B), and [WAC](#)
26 [173-303-806](#)(4)(i)(v)];
- 27 **III.10.G.10.c.ix** A detailed description of how the miscellaneous unit will be installed in compliance with
28 [WAC 173-303-640](#)(3)(c), (d), and (e), in accordance with [WAC 173-303-680](#) and [WAC](#)
29 [173-303-806](#)(4)(i)(i)(B);
- 30 **III.10.G.10.c.x** Documentation that miscellaneous units are designed to prevent the accumulation of
31 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
32 [173-303-680](#), [WAC 173-303-806](#)(4)(i)(i)(A), and [WAC 173-303-806](#)(4)(i)(v)];
- 33 **III.10.G.10.c.xi** Documentation that miscellaneous units are designed to prevent escape of vapors and
34 emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the
35 Administrative Record [[WAC 173-303-640](#)(5)(e), in accordance with [WAC 173-303-](#)
36 [680](#)(2) and [WAC 173-303-806](#)(4)(i)(i)(B)];
- 37 **III.10.G.10.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
38 installation of equipment as identified in Permit Tables [III.10.G.A](#) and III.10.G.B, not addressed in
39 Permit Condition III.10.G.10.c, engineering information as specified below for incorporation into
40 Operating Unit Group 10, Appendices 8.1through 8.14 of this Permit. At a minimum, engineering
41 information specified below will show the following as required pursuant to [WAC 173-303-640](#), in
42 accordance with [WAC 173-303-680](#) (the information specified below will include dimensioned
43 engineering drawings):
- 44 **III.10.G.10.d.i** IQRPE Reports (specific to equipment) will include a review of design drawings,
45 calculations, and other information as applicable, on which the certification report is based.
46 The reports will include, but not be limited to, review of such information described below.

- 1 Information (drawings, specifications, etc.) already included in Operating Unit Group 10,
2 Appendix 8.0 of this Permit may be included in the report by reference and should include
3 drawing and document numbers. The IQRPE Reports will be consistent with the
4 information provided separately in ii through xiii below and the IQRPE Reports specified
5 in Permit Conditions III.10.G.10.b and III.10.G.10.c. [[WAC 173-303-640\(3\)\(a\)](#), in
6 accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 7 **III.10.G.10.d.ii** Design drawings (Process Flow Diagrams, P&IDs [including pressure control systems])
8 specifications and other information specific to equipment (these drawings should include
9 all equipment such as pipe, valves, fittings, pumps, instruments, etc) [[WAC 173-303-
10 640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)
11 through (B)];
- 12 **III.10.G.10.d.iii** The Permittees will provide the design criteria (references to codes and standards, load
13 definitions, and load combinations, materials of construction, and analysis/design
14 methodology) and typical design details for the support of the equipment [[WAC 173-303-
15 640\(3\)\(a\)](#) and [WAC 173-303-640\(3\)\(f\)](#), in accordance with [WAC 173-303-680](#) and [WAC
16 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 17 **III.10.G.10.d.iv** A description of materials and equipment used to provide corrosion protection for external
18 metal components in contact with soil and water, including factors affecting the potential
19 for corrosion [[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#), in accordance with [WAC 173-303-680\(2\)](#)
20 and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)];
- 21 **III.10.G.10.d.v** Materials selection documentation for equipment (e.g., physical and chemical tolerances)
22 [[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-
23 806\(4\)\(i\)\(i\)\(A\)](#)];
- 24 **III.10.G.10.d.vi** Vendor information (including, but not limited to, required performance warranties, as
25 available), consistent with information submitted under ii above, for equipment will be
26 submitted for incorporation into the Administrative Record [[WAC 173-303-640\(3\)\(a\)](#), in
27 accordance with [WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and
28 [WAC 173-303-806\(4\)\(i\)\(iv\)](#)];
- 29 **III.10.G.10.d.vii** Miscellaneous unit, equipment, and leak detection system instrument control logic narrative
30 description (e.g., software functional specifications, descriptions of fail-safe conditions,
31 etc.) [[WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-
32 806\(4\)\(i\)\(v\)](#)].
- 33 **III.10.G.10.d.viii** System Descriptions related to equipment and system descriptions related to leak detection
34 systems, for incorporation into the Administrative Record [[WAC 173-303-680](#), [WAC 173-
35 303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 36 **III.10.G.10.d.ix** A detailed description of how the equipment will be installed and tested [[WAC 173-303-
37 640\(3\)\(c\)](#) through (e) and [WAC 173-303-640\(4\)\(b\)](#) and (c), in accordance with [WAC 173-
38 303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 39 **III.10.G.10.d.x** For process monitoring, control, and leak detection system instrumentation for the WTP
40 Unit Miscellaneous Unit Systems as identified in Permit Table [III.10.G.C](#), a detailed
41 description of how the process monitoring, control, and leak detection system
42 instrumentation will be installed and tested [[WAC 173-303-640\(3\)\(c\)](#) through (e), [WAC
43 173-303-640\(4\)\(b\)](#) and (c), [WAC 173-303-806\(4\)\(c\)\(vi\)](#), and [WAC 173-303-
44 806\(4\)\(i\)\(i\)\(B\)](#)];
- 45 **III.10.G.10.d.xi** Mass and energy balance for projected normal operating conditions, used in developing the
46 P&IDs and Process Flow Diagrams, including assumptions and formulas used to complete

- 1 the mass and energy balance, so that they can be independently verified, for incorporation
2 into the Administrative Record [[WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(B), and
3 WAC 173-303-806(4)(i)(v)];
- 4 **III.10.G.10.d.xii** Documentation that miscellaneous units are designed to prevent the accumulation of
5 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
6 [173-303-680](#), [WAC 173-303-806](#)(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)]; and,
- 7 **III.10.G.10.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent with
8 information submitted under Permit Condition III.10.G.10.c.ii and Permit Conditions
9 III.10.G.10.d.ii, vii, viii, and x above, will be submitted for incorporation into the
10 Administrative Record.
- 11 **III.10.G.10.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit
12 to Ecology, pursuant to Permit Condition III.10.C.9.f, the following as specified below for
13 incorporation into Operating Unit Group 10, Appendix 8.15, except Permit Condition
14 III.10.G.10.e.i, which will be incorporated into Operating Unit Group 10, Addendum E, of this
15 Permit. All information provided under this permit condition must be consistent with information
16 provided pursuant to Permit Conditions III.10.G.10.b, c, d, and e, III.10.C.3.e, and III.10.C.11.b, as
17 approved by Ecology.
- 18 **III.10.G.10.e.i** Integrity assessment program and schedule for the Pretreatment Plant Miscellaneous Unit
19 Systems will address the conducting of periodic integrity assessments on the Pretreatment
20 Plant Miscellaneous Unit Systems over the life of the systems, as specified in Permit
21 Condition III.10.G.10.b.ix and [WAC 173-303-640](#)(3)(b), in accordance with [WAC 173-](#)
22 [303-680](#), and descriptions of procedures for addressing problems detected during integrity
23 assessments. The schedule must be based on past integrity assessments, age of the system,
24 materials of construction, characteristics of the waste, and any other relevant factors [[WAC](#)
25 [173-303-640](#)(3)(b), in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
26 [806](#)(4)(i)(i)(B)];
- 27 **III.10.G.10.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is operated so that
28 it will detect the failure of either the primary or secondary containment structure or the
29 presence of any release of dangerous and/or mixed waste or accumulated liquid in the
30 secondary containment system within twenty-four (24) hours [WAC 173-303-640](#)(4)(c)(iii).
31 Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined
32 as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria
33 must be approved by Ecology in accordance with [WAC 173-303-680](#), [WAC 173-303-](#)
34 [640](#)(4)(c)(iii), and [WAC 173-303-806](#)(4)(i)(i)(B)];
- 35 **III.10.G.10.e.iii** Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and
36 accumulated liquids can be removed from the secondary containment system within
37 twenty-four (24) hours [[WAC 173-303-806](#)(4)(i)(i)(B)];
- 38 **III.10.G.10.e.iv** Descriptions of operational procedures demonstrating appropriate controls and practices are
39 in place to prevent spills and overflows from the Pretreatment Plant Miscellaneous Unit
40 Systems, or containment systems, in compliance with [WAC 173-303-640](#)(5)(b)(i) through
41 (iii), in accordance with [WAC 173-303-680](#) [[WAC 173-303-806](#)(4)(i)(i)(B)];
- 42 **III.10.G.10.e.v** Description of procedures for investigation and repair of the Pretreatment Plant
43 Miscellaneous Unit Systems [[WAC 173-303-640](#)(6) and WAC 173-303-640(7)(e) and (f),
44 in accordance with [WAC 173-303-680](#), [WAC 173-303-320](#), [WAC 173-303-806](#)(4)(a)(v),
45 and WAC 173-303-806(4)(i)(i)(B)];
- 46 **III.10.G.10.e.vi** Updated Addendum C, Narrative Descriptions, Tables and Figures as identified in Permit
47 Tables [III.10.G.A](#) and III.10.G.B, as modified pursuant to Permit Condition

- 1 III.10.G.10.e.ix., and updated to identify routinely non-accessible Pretreatment Plant
2 Miscellaneous Unit Systems [[WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)
3 through (B)];
- 4 **III.10.G.10.e.vii** Descriptions of procedures for management of ignitable and reactive, and incompatible
5 dangerous and/or mixed waste, in accordance with [WAC 173-303-640\(9\)](#) and (10), in
6 accordance with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#);
- 7 **III.10.G.10.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated
8 throughout the Pretreatment Plant Miscellaneous Unit Systems, pursuant to WAC 173-303-
9 380;
- 10 **III.10.G.10.e.ix** Permit Table [III.10.G.A](#), amended as follows [[WAC 173-303-680](#) and [WAC 173-303-
11 806\(4\)\(i\)\(i\)\(A\)](#) through (B)]:
- 12 A.Under column 1, update and complete list of dangerous and mixed waste Pretreatment
13 Plant Miscellaneous Unit Systems, including plant items which comprise each
14 system (listed by item number);
- 15 B.Under column 2, update and complete system designations;
- 16 C.Under column 3, replace the ‘Reserved’ with the Operating Unit Group 10, Appendix 8.0
17 subsections specific to miscellaneous unit systems as listed in column 1;
- 18 D.Under column 4, update and complete list of narrative description tables and figures;
- 19 E.Under column 5, update and complete maximum operating volume for each
20 miscellaneous unit, as applicable;
- 21 F.Permit Table [III.10.G.A.i](#), amended as follows:
- 22 1. Under column 1, update and complete list of plant items that comprise the
23 Pretreatment Plant Vessel Vent System (listed by item number);
- 24 2. Under column 2, update and complete designations;
- 25 3. Under column 3, replace the ‘Reserved’ with the Operating Unit Group 10,
26 Appendix 8.0, subsections (e.g., 9.1, 9.2, etc.) specific to systems as listed in
27 column 1; and,
- 28 4. Under column 4, update and complete list of narrative description tables and
29 figures;
- 30 **III.10.G.10.e.x** Permit Table [III.10.G.C](#) will be completed for Pretreatment Plant Miscellaneous Unit
31 System process and leak detection system monitors and instruments (to include, but not be
32 limited to: instruments and monitors measuring and/or controlling flow, pressure,
33 temperature, density, pH, level, humidity, and emissions) to provide the information as
34 specified in each column heading. Process and leak detection system monitors and
35 instruments for critical systems as specified in Operating Unit Group 10, Appendix 2.0 and
36 as updated pursuant to Permit Condition III.10.C.9.b and for operating parameters as
37 required to comply with Permit Condition III.10.C.3.e.iii will be addressed. Process
38 monitors and instruments for non-waste management operations (e.g., utilities, raw
39 chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition
40 [[WAC 173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and WAC 173-303-
41 806(4)(i)(v)]; and,
- 42 **III.10.G.10.e.xi** Supporting documentation for operating trips and expected operating range as specified in
43 Permit Table [III.10.G.C](#), as approved pursuant to Permit Condition III.10.G.10.e.x [[WAC
44 173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), WAC 173-303-806(4)(i)(iv), and WAC 173-
45 303-806(4)(i)(v)];

1 **III.10.G.10.e.xii**

2 Documentation of process and leak detection instruments and monitors (as listed in Permit
3 Table [III.10.G.C.](#)) for the Pretreatment Plant Miscellaneous Unit Systems to include, but
4 not be limited to, the following [[WAC 173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(B\)](#), and
WAC 173-303-806(4)(i)(v)]:

- 5 A. Procurement specifications;
- 6 B. Location used;
- 7 C. Range, precision, and accuracy;
- 8 D. Detailed descriptions of calibration/functionality test procedures (e.g., method number
9 [ASTM]) or provide a copy of manufacturer's recommended calibration procedures;
- 10 E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists,
11 including justification for calibration, inspection and maintenance frequencies, criteria for
12 identifying instruments found to be significantly out of calibration, and corrective action to be
13 taken for instruments found to be significantly out of calibration (e.g., increasing frequency of
14 calibration, instrument replacement, etc.); and,
- 15 F. Equipment instrument control logic narrative description (e.g., software functional
16 specifications, descriptions of fail-safe conditions, etc.) [[WAC 173-303-680\(2\)](#), [WAC 173-303-](#)
17 [806\(4\)\(i\)\(B\)](#), and WAC 173-303-806(4)(i)(v)].

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Waste Feed Evaporation Process System</u></p> <p>FEP-SEP-00001A (Waste Feed Evaporator Separator Vessel)</p> <p>FEP-SEP-00001B (Waste Feed Evaporator Separator Vessel)</p>	<p>FEP</p>	<p><u>24590-PTF</u></p> <p>-3PS-MEVV-T0001, Rev 2</p> <p>-M5-V17T-00004001, Rev 3</p> <p>-M5-V17T-00004002, Rev 3</p> <p>-M6-FEP-00001001, Rev 0</p> <p>-M6-FEP-00001002, Rev 0</p> <p>-M6-FEP-00002001, Rev 0</p> <p>-M6-FEP-00002002, Rev 0</p> <p>-M6-FEP-00002003, Rev 0</p> <p>-M6-FEP-00003001, Rev 0</p> <p>-M6-FEP-00003002, Rev 0</p> <p>-M6-FEP-00004001, Rev 0</p> <p>-M6-FEP-00004002, Rev 0</p> <p>-M6-FEP-00004003, Rev 0</p> <p>-M6-FEP-00005001, Rev 0</p> <p>-MVD-FEP-P0001, Rev 2</p> <p>-MVD-FEP-P0002, Rev 2</p> <p>-MVD-FEP-P0003, Rev 1</p> <p>-MVD-FEP-P0006, Rev 3</p> <p>-MVD-FEP-P0007, Rev 2</p> <p>-MV-FEP-P0001, Rev 0</p> <p>-MV-FEP-P0002, Rev 0</p> <p>-N1D-FEP-00002, Rev 6</p> <p>-N1D-FEP-P0003, Rev 1</p> <p>-N1D-FEP-P0004</p> <p>-N1D-FEP-P0005</p> <p>-P1-P01T-00001, Rev 7</p>	<p>Section 4.1.2.2.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>FEP-SEP-00001A = 14,512</p> <p>FEP-SEP-00001B = 14, 512</p>

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-P1-P01T-P0002, Rev 7 -P1-P01T-P0007, Rev 6		
<p><u>Waste Feed Evaporation Process System (Cont.)</u></p> <p>FEP-COND-00001A (Waste Evaporator Primary Condenser)</p> <p>FEP-COND-00001B (Waste Evaporator Primary Condenser)</p> <p>FEP-COND-00002A (Waste Evaporator Intercondenser)</p> <p>FEP-COND-00002B (Waste Evaporator Intercondenser)</p> <p>FEP-COND-00003A (Waste Evaporator Aftercondenser)</p> <p>FEP-COND-00003B (Waste Evaporator Aftercondenser)</p>	<p>FEP</p>	<p><u>24590-PTF</u></p> <p>-3PS-MEVV- T0001, Rev 2</p> <p>-M5-V17T-00004001, Rev 3</p> <p>-M5-V17T-00004002, Rev 3</p> <p>-M6-FEP-00003002, Rev 0</p> <p>-M6-FEP-00005001, Rev 0</p> <p>-MED-FEP-P0003, Rev 0</p> <p>-MED-FEP-P0004, Rev 0</p> <p>-MED-FEP-P0005, Rev 0</p> <p>-MED-FEP-P0006, Rev 0</p> <p>-MED-FEP-P0007, Rev 0</p> <p>-MED-FEP-P0008, Rev 0</p> <p>--MED-FEP-P0003, Rev 0</p> <p>-MED-FEP-P0004, Rev 0</p> <p>-MED-FEP-P0005, Rev 0</p> <p>-MED-FEP-P0006, Rev 0</p> <p>-MED-FEP-P0007, Rev 0</p> <p>-MED-FEP-P0008, Rev 0</p> <p>-N1D-FEP-P0008, Rev 0</p> <p>-N1D-FEP-00009, Rev 3</p> <p>-N1D-FEP-00010, Rev 3</p> <p>-P1-P01T-00001, Rev 7</p> <p>-P1-P01T-P0002, Rev 7</p> <p>-P1-P01T-P0007, Rev 6</p>	<p>Section 4.1.2.2.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>	<p>N/A</p>

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Waste Feed Evaporation Process System (Cont.)</u> FEP-RBLR-00001A (Waste Feed Evaporator Reboiler) FEP-RBLR-00001B (Waste Feed Evaporator Reboiler)</p>	FEP	<p><u>24590-PTF</u> -3PS-MEVV- T0001, Rev 2 -M5-V17T-00004001, Rev 3 -M5-V17T-00004002, Rev 3 -MED-FEP-P0010, Rev 0 -N1D-FEP-P0007, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-P0007, Rev 6</p>	Section 4.1.2.2.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A
<p><u>Cesium Nitric Acid Recovery Process System</u> CNP-EVAP-00001 (Cesium Evaporator Separator Vessel)</p>	CNP	<p><u>24590-PTF</u> -3PS-MEVV-T0002, Rev 4 -M5-V17T-00014, Rev 2 -M6-CNP-00001, Rev 2 -M6-CNP-00002, Rev 2 -M6-CNP-00008, Rev 2 -M6-CNP-0000800, Rev 0 MV-CNP-P0001, Rev 0 -MV-CNP-P0002, Rev 1 - -MV-CNP-P0005, Rev 0 -MVD-CNP-P0003, Rev 1 -MVD-CNP-P0010, Rev 0 -MWD-CNP-P0001, Rev 0 -N1D-CNP-P0005, Rev 1 -N1D-CNP-P0006, Rev 3 -N1D-CNP-P0009, Rev 1 -N1D-CNP-P0011, Rev 1</p>	Section 4.1.2.6.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	CNP-EVAP-00001 = RESERVED

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6		
<u>Cesium Nitric Acid Recovery Process System (Cont.)</u> CNP-HX-00001 (Cesium Evaporator Concentrate Reboiler)	CNP	<u>24590-PTF</u> -3PS-MEVV- T0002, Rev 4 -M5-V17T-P0014, Rev 2 -M6-CNP-00001, Rev 2 -M6-CNP-00002, Rev 2 -M6-CNP-00008, Rev 2 - -MED-CNP-P0003, Rev 0 -MED-CNP-P0004, Rev 1 -MED-CNP-P0005, Rev 0 -MED-CNP-P0010, Rev 0 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	Section 4.1.2.6.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A
<u>Cesium Nitric Acid Recovery Process System (Cont.)</u> CNP-DISTC-00001 (Cesium Evaporator Nitric Acid Rectifier Column)	CNP	<u>24590-PTF</u> -M5-V17T-00014, Rev 2 -M6-CNP-00010, Rev 2 -N1D-CNP-00001, Rev 1 -P1-P01T-00003, Rev 4 -3PS-MEVV- T0002, Rev 4	Section 4.1.2.6.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	RESERVED

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Cesium Nitric Acid Recovery Process System (Cont.)</u></p> <p>CNP-HX-00002 (Cesium Evaporator Primary Condenser)</p> <p>CNP-HX-00003 (Cesium Evaporator Inter-Condenser)</p> <p>CNP-HX-00004 (Cesium Evaporator After-Condenser)</p>	CNP	<p><u>24590-PTF</u></p> <p>-M5-V17T-00014, Rev 2</p> <p>-M6-CNP-00001, Rev 2</p> <p>-M6-CNP-00002, Rev 2</p> <p>-M6-CNP-00010, Rev 2</p> <p>-M6-CNP-00008001, Rev 0</p> <p>-MED-CNP-P0003, Rev 0</p> <p>-MED-CNP-P0004, Rev 1</p> <p>-MED-CNP-P0005, Rev 0</p> <p>-MED-CNP-P0010, Rev 0</p> <p>-N1D-CNP-P0002, Rev 1</p> <p>-N1D-CNP-P0003, Rev 1</p> <p>-N1D-CNP-P0012, Rev 1</p> <p>-P1-P01T-00001, Rev 7</p> <p>-P1-P01T-P0002, Rev 7</p> <p>-P1-P01T-00003, Rev 4</p> <p>-P1-P01T-00004, Rev 6</p> <p>-3PS-MEVV- T0002, Rev 4</p>	Section 4.1.2.6.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A N/A N/A
<p><u>Treated LAW Evaporation Process System</u></p> <p>TLP-SEP-00001 (Treated LAW Evaporator Separator Vessel)</p>	TLP	<p><u>24590-PTF</u></p> <p>-3PS-MEVV- T0001, Rev 2</p> <p>-M5-V17T-00005, Rev 2</p> <p>-M6-TLP-00001, Rev 3</p> <p>-M6-TLP-00002, Rev 3</p> <p>-M6-TLP-00003, Rev 3</p> <p>-MVD-TLP-P0001, Rev 2</p> <p>-MVD-TLP-P0002, Rev 2</p> <p>-MVD-TLP-P0004, Rev 1</p> <p>-MVD-TLP-P0005, Rev 2</p>	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TLP-SEP-00001= 13,359

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0001, Rev 2 -N1D-TLP-P0005, Rev 3 -N1D-TLP-P0006, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4		
<u>Treated LAW Evaporation Process System (Cont.)</u> TLP-COND-00001 (Treated LAW Primary Condenser) TLP-COND-00002 (Treated LAW Inter-condenser) TLP-COND-00003 (Treated LAW After-condenser)	TLP	<u>24590-PTF</u> -3PS-MEVV- T0001, Rev 2 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 -M6-TLP-00002, Rev 3 -M6-TLP-00003, Rev 3 -MED-TLP-P0001, Rev 0 -MED-TLP-00002, Rev 4 -MED-TLP-00003, Rev 4 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0002, Rev 0 -N1D-TLP-P0003, Rev 4 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Treated LAW Evaporation Process System (Cont.)</u> TLP-RBLR-00001 (Treated LAW Evaporator Reboiler)</p>	TLP	<p><u>24590-PTF</u> -3PS-MEUV- T0001, Rev 2 -M5-V17T-00005, Rev 5 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0011, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4</p>	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A

Footnotes:

^a The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) specified in Permit Table [III.10.G.A.i](#) is shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) Systems. Any reference in this Permit to Permit Table [III.10.G.A](#) is also a reference to Permit Table [III.10.G.A.i](#).

Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
<p><u>Pretreatment Vessel Vent Process System</u></p> <p>PVP-SCB-00002 (Vessel Vent Caustic Scrubber)</p>	PVP	<p><u>24590-PTF</u></p> <p>-M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -M6-PVP-00002, Rev 3 -M6-PVP-00017001, Rev 0 -M6-PVP-00017002, Rev 0 -M6-PVP-00017003, Rev 0 -M6-PWD-00044, Rev 3 -MKD-PVP-P0002, Rev 2 -MVD-PVP-P0001, Rev 0 -MV-PVP-P0002, Rev 0 -N1D-PVP-P0001, Rev 1 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6</p>	<p>Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>Pretreatment Vessel Vent Process System (Cont.)</u></p> <p>PVP-HEME-00001A (Vessel Vent HEME, Mist eliminator)</p> <p>PVP-HEME-00001B (Vessel Vent HEME, Mist Eliminator)</p> <p>PVP-HEME-00001C (Vessel Vent HEME, Mist Eliminator)</p>	PVP	<p><u>24590-PTF</u></p> <p>-M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6</p>	<p>Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>Pretreatment Vessel Vent Process System (Cont.)</u></p> <p>PVP-HX-00002 (Vessel Vent Scrubbing Liquid Cooler)</p>	PVP	<p><u>24590-PTF</u></p> <p>-M5-V17T-00021001, Rev 2 -M6-PVP-00017001, Rev 0 -M6-PVP-00017002, Rev 0 -M6-PVP-00017003, Rev 0 -P1-P01T-P0002, Rev 7</p>	<p>Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.</p>

Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
		-P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	
<u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-OXID-00001 (Vessel Vent VOC Oxidizer Unit)	PVP	<u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -M6-PVP-00017001, Rev 0 -M6-PVP-00017002, Rev 0 -M6-PVP-00017003, Rev 0 -M6-PVP-000018001, Rev 0 -M6-PVP-000018002, Rev 0 -N1D-PVP-P0002, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
<u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-CLR-00001 (Vessel Vent Aftercooler)	PVP	<u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
<u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-ADBR-00001A (Vessel Vent Carbon Bed Absorber)	PVP	<u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.

Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
PVP-ADBR-00001B (Vessel Vent Carbon Bed Absorber)		-P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	
<p><u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-FILT-00001 (Vessel Vent Adsorber Outlet Filter)</p>	PVP	<p><u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6</p>	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
<p><u>Process Vessel Vent System</u> PVV-HEPA-00001A (Vessel Vent Primary HEPA Filter) PVV-HEPA-00001B (Vessel Vent Primary HEPA Filter) PVV-HEPA-00002A (Vessel Vent Secondary HEPA Filter) PVV-HEPA-00002B (Vessel Vent Secondary HEPA Filter)</p>	PVV	<p><u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -P1-P01T-P0002, Rev 7</p>	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
<p><u>Process Vessel Vent System (Cont.)</u> PVV-FAN-00001A (Vessel Vent Exhaust Fan)</p>	PVV	<p><u>24590-PTF</u> -M5-V17T-00021001, Rev 2 -M5-V17T-00021004, Rev 2 -P1-P01T-P0002, Rev 7</p>	Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.

Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
PVV-FAN-00001B (Vessel Vent Exhaust Fan)		-P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6	
<p><u>Pretreatment Pulse Jet Mixer Exhaust Vent System</u></p> <p>PJV-HEPA-00001A (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001B (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001C (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001D (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001E (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001F (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00001G (PJV Primary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00002A (PJV Secondary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00002B (PJV Secondary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00002C (PJV Secondary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00002D (PJV Secondary Exhaust HEPA Filter)</p> <p>PJV-HEPA-00002E (PJV Secondary Exhaust HEPA Filter)</p>	PJV	<p><u>24590-PTF</u></p> <p>-M5-V17T-00021002, Rev 2</p> <p>-M6-PJV-00001, Rev 3</p> <p>-M6-PJV-00002, Rev 3</p> <p>-M6-PJV-00004, Rev 3</p> <p>-MVD-PJV-P0003, Rev 0</p> <p>-N1D-PJV-P0001, Rev 1</p> <p>-P1-P01T-00001, Rev 7</p>	Section 4.1.2.17; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.

Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
PJV-HEPA-00002F (PJV Secondary Exhaust HEPA Filter)			
<u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u> PJV-FAN-00001A (PJV Exhaust Fan) PJV-FAN-00001B (PJV Exhaust Fan) PJV-FAN-00001C (PJV Exhaust Fan)	PJV	<u>24590-PTF</u> -M5-V17T-00021002, Rev 2 -M6-PJV-00001, Rev 3 -M6-PJV-00002, Rev 3 -M6-PJV-00004, Rev 3 -MVD-PJV-P0003, Rev 0 -N1D-PJV-P0001, Rev 1 -P1-P01T-00001, Rev 7	Section 4.1.2.17; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
<u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u> PJV-DMST-00002A (PJV Demister) PJV-DMST-00002B (PJV Demister) PJV-DMST-00002C (PJV Demisters)	PJV	<u>24590-PTF</u> -M5-V17T-00021002, Rev 2 -M6-PJV-00001, Rev 3 -M6-PJV-00002, Rev 3 -M6-PJV-00004, Rev 3 -MVD-PJV-P0003, Rev 0 -N1D-PJV-P0001, Rev 1 -P1-P01T-00001, Rev 7	Section 4.1.2.17; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.
Footnotes: ^a The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), and Pulse Jet Mixer Exhaust System (PJV) specified in Permit Table III.10.G.A.i are shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), and Pulse Jet Mixer Exhaust System (PJV) Systems. Any reference in this Permit to Permit Table III.10.G.A is also a reference to Permit Table III.10.G.A.i .			

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Table III.10.G.B – Pretreatment Plant Miscellaneous Unit Secondary Containment Systems Including Sumps, Bulges, and Floor Drains

Sump, Bulge or Floor Drain I.D.# & Room Location	Maximum Sump/Bulge (gallons), or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions^a (inches) & Materials of Construction	Engineering Description (Drawings Nos. Specification Nos. etc.)
PVP-ZY-00037-S11B-03, P-0105 (PVP-BULGE-00001, El. 0')			3" Stainless Steel	PVP-00017002
PVP-ZY-00036-S11B-03, P-0101A (PVP-BULGE-00002, El. 0')			3" Stainless Steel	PVP-00018002
PVP-ZY-00056-S11B-03, P-0302 (PVP-BULGE-00014, El. 56')			3" Stainless Steel	PVP-00017003
PWD-FD-00323 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00044, Rev 3
PWD-FD-00324 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00044, Rev 3
PWD-FD-00325 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00044, Rev 3
PWD-FD-00326 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00044, Rev 3
PWD-FD-00327 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00044, Rev 3
PWD-FD-00512 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00513 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3

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PWD-FD-00514 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00515 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00516 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00517 P-0325 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00557 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
PWD-FD-00559 P-0430 Drain, El. 77'	665	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0062
PWD-FD-00561 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-00043, Rev 3
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

Table III.10.G.C. – Pretreatment Plant Miscellaneous Unit System Process and Leak Detection Instruments and Parameters

Miscellaneous Unit 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	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PVP-BULGE-00001 ^a	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PVP-BULGE-00014 ^a	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aSump locator (including P&ID designator) is located on Permit Table III.10.G.B – Pretreatment Plant Miscellaneous Unit Secondary Containment Systems Including Sumps, Bulges, and Floor Drains.

**Table III.10.G.D. – Pretreatment Plant Miscellaneous Unit Systems
Estimated Emission Rates**

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

1 **III.10.H LAW VITRIFICATION SYSTEM – SHORT TERM MISCELLANEOUS THERMAL**
2 **TREATMENT UNIT-SHAKEDOWN, DEMONSTRATION TEST, AND POST-**
3 **DEMONSTRATION TEST**

4 For purposes of Permit Section [III.10.H](#), where reference is made to [WAC 173-303-640](#), the
5 following substitutions apply: substituting the terms “LAW Vitrification System” for “tank
6 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and
7 “sub-system(s) or sub-system equipment of a LAW Vitrification System” for “component(s)” in
8 accordance with [WAC 173-303-680](#).

9 **III.10.H.1 General Conditions During Shakedown, Demonstration Test, and Post-**
10 **Demonstration Test for LAW Vitrification System**

11 **III.10.H.1.a** Construction and Maintenance [[WAC 173-303-640](#), in accordance with [WAC 173-303-680](#)(2) and
12 (3), and [WAC 173-303-340](#)].

13 **III.10.H.1.a.i** The Permittees will construct the LAW Vitrification System (listed in Permit Tables
14 [III.10.H.A](#) and [B](#), as approved/modified pursuant to Permit Condition [III.10.H.5](#)) as
15 specified in Permit Condition [III.10.H.1](#) and Operating Unit Group 10, Addendum C of this
16 Permit, and Operating Unit Group 10, Appendices 9.1 through 9.15 and 9.17 of this Permit,
17 as approved pursuant to Permit Conditions [III.10.H.5.a](#) through [d](#), and [III.10.H.5.f](#).

18 **III.10.H.1.a.ii** The Permittees will construct all containment systems for the LAW Vitrification System as
19 specified in Operating Unit Group 10, Addendum C of this Permit, and Operating Unit
20 Group 10, Appendices 9.2 and 9.4 through 9.14 of this Permit, as approved pursuant to
21 Permit Conditions [III.10.H.5.a](#) through [d](#).

22 **III.10.H.1.a.iii** The Permittees will ensure all certifications required by specialists (e.g., IQRPE,
23 independent corrosion expert, independent, qualified installation inspector, etc.) use the
24 following statement or equivalent pursuant to Permit Condition [III.10.C.10](#):

25 “I, (Insert Name), have (choose one or more of the following: overseen, supervised,
26 reviewed, and/or certified) a portion of the design or installation of a new LAW Vitrification
27 System or component located at (address), and owned/operated by (name(s)). My duties
28 were: (e.g., installation inspector, testing for tightness, etc.), for the following LAW
29 Vitrification System components (e.g., the venting piping, etc.), as required by the
30 Dangerous Waste Regulations, namely, [WAC 173-303-640](#)(3) (applicable paragraphs (i.e.,
31 (a) through (g)) in accordance with [WAC 173-303-680](#)).

32 “I certify under penalty of law that I have personally examined and am familiar with the
33 information submitted in this document and all attachments and that, based on my inquiry of
34 those individuals immediately responsible for obtaining the information, I believe that the
35 information is true, accurate, and complete. I am aware that there are significant penalties
36 for submitting false information, including the possibility of fine and imprisonment.”

- 1 **III.10.H.1.a.iv** The Permittees must ensure that proper handling procedures are adhered to in order to
2 prevent damage to the LAW Vitrification System during installation. Prior to covering,
3 enclosing, or placing the new LAW Vitrification System or component in use, an
4 independent, qualified, installation inspector or an IQRPE, either of whom is trained and
5 experienced in the proper installation of similar systems or components, must inspect the
6 system for the presence of any of the following items:
- 7 A Weld breaks;
 - 8 B Punctures;
 - 9 C Scrapes of protective coatings;
 - 10 D Cracks;
 - 11 E Corrosion; and,
 - 12 F Other structural damage or inadequate construction/installation.
- 13 All discrepancies must be remedied before the LAW Vitrification System is covered,
14 enclosed, or placed in use [[WAC 173-303-640\(3\)\(c\)](#), in accordance with [WAC 173-303-
15 680\(2\)](#) and (3)].
- 16 **III.10.H.1.a.v** For the LAW Vitrification System or components that are placed underground and that are
17 backfilled, the Permittees must provide a backfill material that is a non-corrosive, porous,
18 homogeneous substance. The backfill must be installed so that it is placed completely
19 around the LAW Vitrification System and compacted to ensure that the LAW Vitrification
20 System is fully and uniformly supported [[WAC 173-303-640\(3\)\(d\)](#), in accordance with
21 [WAC 173-303-680\(2\)](#) and (3)].
- 22 **III.10.H.1.a.vi** The Permittees must test for tightness the LAW Vitrification System or components, prior to
23 being covered, enclosed, or placed into use. If the LAW Vitrification System or components
24 are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be
25 performed prior to the LAW Vitrification System being covered, enclosed, or placed in use
26 [[WAC 173-303-640\(3\)\(e\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)].
- 27 **III.10.H.1.a.vii** The Permittees must ensure the LAW Vitrification System equipment is supported and
28 protected against physical damage and excessive stress due to settlement, vibration,
29 expansion, or contraction [[WAC 173-303-640\(3\)\(f\)](#), in accordance with [WAC 173-303-
30 680\(2\)](#) and (3)].
- 31 **III.10.H.1.a.viii** The Permittees must provide the type and degree of corrosion protection recommended by
32 an independent corrosion expert, based on the information provided in Operating Unit Group
33 10, Appendices 9.9 and 9.11 of this Permit, as approved pursuant to Permit Conditions
34 III.10.H.5.b.i, III.10.H.5.b.iv, III.10.H.5.b.v, III.10.H.5.c.i, III.10.H.5.c.iv, III.10.H.5.c.v,
35 III.10.H.5.d.i, III.10.H.5.d.iv, and III.10.H.5.d.v, or other corrosion protection if Ecology
36 believes other corrosion protection is necessary to ensure the integrity of the LAW
37 Vitrification System during use of the LAW Vitrification System. The installation of a
38 corrosion protection system that is field fabricated must be supervised by an independent
39 corrosion expert to ensure proper installation [[WAC 173-303-640\(3\)\(g\)](#), in accordance with
40 [WAC 173-303-680\(2\)](#) and (3)].
- 41 **III.10.H.1.a.ix** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will
42 obtain and keep on file in the WTP Unit operating record, written statements by those
43 persons required to certify the design of the LAW Vitrification System and supervise the

1 installation of the LAW Vitrification System, as specified in [WAC 173-303-640\(3\)\(b\)](#), (c),
2 (d), (e), (f), and (g), in accordance with [WAC 173-303-680](#), attesting that the LAW
3 Vitrification System and corresponding containment system listed in Permit Tables
4 [III.10.H.A](#) and [III.10.H.B](#), as approved/modified pursuant to Permit Condition III.10.H.5,
5 were properly designed and installed, and that repairs, in accordance with [WAC 173-303-](#)
6 [640\(3\)\(c\)](#) and (e) were performed [[WAC 173-303-640\(3\)\(a\)](#) and [WAC 173-303-640\(3\)\(h\)](#),
7 in accordance with [WAC 173-303-680\(3\)](#)].

8 **III.10.H.1.a.x**

9 The independent LAW Vitrification System installation inspection and subsequent written
10 statements will be certified in accordance with [WAC 173-303-810\(13\)\(a\)](#), as modified
11 pursuant to Permit Condition III.10.H.1.a.iii, comply with all requirements of [WAC 173-](#)
12 [303-640\(3\)\(h\)](#) in accordance with [WAC 173-303-680](#), and will consider, but not be limited
13 to, the following LAW Vitrification System installation documentation:

14 A Field installation report with date of installation;

15 B Approved welding procedures;

16 C Welder qualification and certifications;

17 D Hydro-test reports, as applicable, in accordance with the American Society of Mechanical
18 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American
19 Petroleum Institute (API) Standard 620, or Standard 650, as applicable;

20 E Tester credentials;

21 F Field inspector credentials;

22 G Field inspector reports;

23 H Field waiver reports; and,

24 I Non-compliance reports and corrective action (including field waiver reports) and repair
25 reports.

26 **III.10.H.1.a.xi**

27 The Permittees will ensure periodic integrity assessments are conducted on the LAW
28 Vitrification System, listed in Permit Table [III.10.H.A](#), as approved/modified pursuant to
29 Permit Condition III.10.H.5, over the term of this Permit in accordance with [WAC 173-303-](#)
30 [680\(2\)](#) and (3) as specified in [WAC 173-303-640\(3\)\(b\)](#), following the description of the
31 integrity assessment program and schedule in Operating Unit Group 10, Addendum E of
32 this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i and III.10.C.5.c.
33 Results of the integrity assessments will be included in the WTP Unit operating record until
34 ten (10) years after post-closure, or corrective action is complete and certified, whichever is
35 later.

36 **III.10.H.1.a.xii**

37 The Permittees will address problems detected during the LAW Vitrification System
38 integrity assessments specified in Permit Condition III.10.H.1.a.xi following the integrity
39 assessment program in Operating Unit Group 10, Addendum E of this Permit, as approved
40 pursuant to Permit Conditions III.10.H.5.e.i and III.10.C.5.c.

41 **III.10.H.1.a.xiii**

42 All process monitors/instruments, as specified in Permit Table [III.10.H.F](#), as
43 approved/modified pursuant to Permit Condition III.10.H.5, will be equipped with
operational alarms to warn of deviation, or imminent deviation from the limits specified in
Permit Table [III.10.H.F](#).

III.10.H.1.a.xiv

The Permittees will install and test all process and leak detection system
monitors/instrumentation as specified in Permit Tables [III.10.H.C](#) and [III.10.H.F](#), as

1 approved/modified pursuant to Permit Condition III.10.H.5, in accordance with Operating
2 Unit Group 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved pursuant to Permit
3 Conditions III.10.H.5.d.x and III.10.H.5.f.xvi.

4 **III.10.H.1.a.xv** Except during periods of LAW Vitrification System startup and shutdown, no dangerous
5 and/or mixed waste will be treated in the LAW Vitrification System unless the operating
6 conditions, specified under Permit Condition III.10.H.1.c are complied with.

7 **III.10.H.1.a.xvi** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
8 materials in the LAW Vitrification System if these substances could cause the subsystem,
9 subsystem equipment, or the containment system to rupture, leak, corrode, or otherwise fail
10 [[WAC 173-303-640\(5\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#)]. This condition is not
11 applicable to corrosion of LAW Vitrification System sub-system or sub-system equipment
12 that are expected to be replaced as part of normal operations (e.g., melters).

13 **III.10.H.1.a.xvii** The Permittees will operate the LAW Vitrification System to prevent spills and overflows
14 using controls and practices as required under [WAC 173-303-640\(5\)\(b\)](#) described in Permit
15 Condition [III.10.C.5](#) and Operating Unit Group 10, Appendix 9.18 of this Permit, as
16 approved pursuant to Permit Condition III.10.H.5.e [[WAC 173-303-640\(5\)\(b\)](#), in accordance
17 with [WAC 173-303-680\(2\)](#) and (3), and [WAC 173-303-806\(4\)\(c\)\(ix\)](#)].

18 **III.10.H.1.a.xviii** For routinely non-accessible LAW Vitrification System sub-systems, as specified in
19 Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit
20 Condition III.10.H.5.e.vi, the Permittees will mark all routinely non-accessible LAW
21 Vitrification System sub-systems access points with labels, or signs, to identify the waste
22 contained in each LAW Vitrification System sub-system. The label, or sign, must be legible
23 at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
24 manner which adequately warns employees, emergency response personnel, and the public
25 of the major risk(s) associated with the waste being stored or treated in the LAW
26 Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-
27 accessible” means personnel are unable to enter these areas while waste is being managed in
28 them [[WAC 173-303-640\(5\)\(d\)](#), in accordance with [WAC 173-303-680\(2\)](#)].

29 **III.10.H.1.a.xix** For all LAW Vitrification System sub-systems not addressed in Permit Condition
30 III.10.H.1.a.xviii, the Permittees will mark all these LAW Vitrification System sub-systems
31 holding dangerous and/or mixed waste with labels, or signs, to identify the waste contained
32 in the LAW Vitrification System sub-systems. The labels, or signs, must be legible at a
33 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
34 manner which adequately warns employees, emergency response personnel, and the public
35 of the major risk(s) associated with the waste being stored or treated in the LAW
36 Vitrification System sub-systems [[WAC 173-303-640\(5\)\(d\)](#), in accordance with [WAC 173-
37 303-680\(2\)](#)].

38 **III.10.H.1.a.xx** The Permittees will ensure that the secondary containment systems for the LAW
39 Vitrification System sub-systems listed in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), as
40 approved/modified pursuant to Permit Condition III.10.H.5, are free of cracks or gaps to
41 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
42 system to the soil, groundwater, or surface water at any time during use of the LAW
43 Vitrification System sub-systems. Any indication that a crack or gap may exist in the
44 containment systems will be investigated and repaired in accordance with Operating Unit

1 Group 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition
2 III.10.H.5.e.v [[WAC 173-303-640\(4\)\(b\)\(i\)](#), [WAC 173-303-640\(4\)\(e\)\(i\)\(C\)](#), and [WAC 173-
3 303-640\(6\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3), [WAC 173-303-
4 806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-320](#)].

5 **III.10.H.1.a.xxi**

6 The Permittees must immediately, and safely, remove from service any LAW Vitrification
7 System or secondary containment system which through an integrity assessment is found to
8 be “unfit for use” as defined in [WAC 173-303-040](#), following Permit Conditions
9 III.10.H.1.a.xxiii, A through D, and F. The affected LAW Vitrification System or secondary
10 containment system must be either repaired or closed in accordance with Permit Condition
11 III.10.H.1.a.xxiii E. [[WAC 173-303-640\(7\)\(e\)](#) and (f), [WAC 173-303-640\(8\)](#), in accordance
with [WAC 173-303-680\(3\)](#)].

12 **III.10.H.1.a.xxii**

13 An impermeable coating, as specified in Operating Unit Group 10, Appendices 9.4, 9.5, 9.7,
14 9.9, 9.11, and 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v.
15 will be maintained for all concrete containment systems and concrete portions of
16 containment systems for each LAW Vitrification System sub-systems listed in Permit Tables
17 [III.10.H.A](#) and [III.10.H.B](#), as approved/modified pursuant to Permit Condition III.10.H.5
18 (concrete containment systems that do not have a liner, pursuant to [WAC 173-303-
19 640\(4\)\(e\)\(i\)](#), in accordance with [WAC 173-303-680\(2\)](#), and have construction joints, will
20 meet the requirements of [WAC 173-303-640\(4\)\(e\)\(ii\)\(C\)](#), in accordance with [WAC 173-
21 303-680\(2\)](#). The coating will prevent migration of any dangerous and mixed waste into the
concrete. All coatings will meet the following performance standards:

22 A. The coating must seal the containment surface such that no cracks, seams, or other
23 avenues through which liquid could migrate are present;

24 B. The coating must be of adequate thickness and strength to withstand the normal
25 operation of equipment and personnel within the given area such that degradation or
26 physical damage to the coating or lining can be identified and remedied before
27 dangerous and mixed waste could migrate from the system; and

28 C. The coating must be compatible with the dangerous and mixed waste, treatment
29 reagents, or other materials managed in the containment system [[WAC 173-303-
30 640\(4\)\(e\)\(ii\)\(D\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3), and [WAC 173-303-
31 806\(4\)\(i\)\(i\)\(A\)](#)].

32 **III.10.H.1.a.xxiii**

33 The Permittees will inspect all secondary containment systems for the LAW Vitrification
34 System sub-systems listed in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), as approved/modified
35 pursuant to Permit Condition III.10.H.5, in accordance with the Inspection Schedule
36 specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to
37 Permit Conditions III.10.H.5.e.i and III.10.C.5.c, and take the following actions if a leak or
38 spill of dangerous and/or mixed waste is detected in these containment systems [[WAC 173-
39 303-640\(5\)\(c\)](#) and [WAC 173-303-640\(6\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3),
[WAC 173-303-320](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)]:

40 A Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW
41 Vitrification System sub-systems or secondary containment system;

42 B Determine the source of the dangerous and/or mixed waste;

- 1 C Remove the dangerous and/or mixed waste from the containment area in accordance with
2 [WAC 173-303-680](#)(2) and (3) as specified in [WAC 173-303-640](#)(7)(b). The dangerous
3 and/or mixed waste removed from containment areas of the LAW Vitrification System
4 sub-systems will be, as a minimum, managed as mixed waste;
- 5 D If the cause of the release was a spill that has not damaged the integrity of the LAW
6 Vitrification System sub-system, the Permittees may return the LAW Vitrification
7 System sub-system to service in accordance with [WAC 173-303-680](#)(2) and (3) as
8 specified in [WAC 173-303-640](#)(7)(e)(ii). In such case, the Permittees will take action to
9 insure the incident that caused the dangerous and/or mixed waste to enter the containment
10 system will not reoccur [[WAC 173-303-320](#)(3)];
- 11 E If the source of the dangerous and/or mixed waste is determined to be a leak from the
12 primary LAW Vitrification System into the secondary containment system, or the system
13 is unfit for use as determined through an integrity assessment or other inspection, the
14 Permittees will comply with the requirements of [WAC 173-303-640](#)(7) and take the
15 following actions:
- 16 1. Close the LAW Vitrification System sub-system following procedures in [WAC 173-](#)
17 [303-640](#)(7)(e)(i), in accordance with [WAC 173-303-680](#) and Operating Unit Group
18 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8,
19 or,
 - 20 2. Repair and re-certify (in accordance with [WAC 173-303-810](#)(13)(a), as modified
21 pursuant to Permit Condition [III.10.H.1.a.iii](#)) the LAW Vitrification System, in
22 accordance with Operating Unit Group 10, Appendix 9.18 of this Permit, as approved
23 pursuant to Permit Condition [III.10.H.5.e.v](#), before the LAW Vitrification System is
24 placed back into service [[WAC 173-303-640](#)(7)(e)(iii) and [WAC 173-303-640](#)(7)(f),
25 in accordance with [WAC 173-303-680](#)];
- 26 F. The Permittees will document in the operating record actions/procedures taken to comply
27 with A. through E. above as specified in [WAC 173-303-640](#)(6)(d), in accordance with
28 [WAC 173-303-680](#)(2) and (3).
- 29 G. In accordance with [WAC 173-303-680](#)(2) and [WAC 173-303-680](#) (3), the Permittees
30 will notify and report releases to the environment to Ecology as specified in [WAC 173-](#)
31 [303-640](#)(7)(d).

32 **III.10.H.1.a.xxiv**

33 If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water,
34 liquids from damaged or broken pipes) cannot be removed from the secondary containment
35 system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four
36 (24) hours of discovery. The notification will provide the information in A, B, and C, listed
37 below. The Permittees will provide Ecology with a written demonstration within seven (7)
38 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)]:

- 39 A. Reasons for delayed removal;
- 40 B. Measures implemented to ensure continued protection of human health and the
41 environment; and,
- 42 C. Current actions being taken to remove liquids from secondary containment.

43 **III.10.H.1.a.xxv**

44 All air pollution control devices and capture systems in the LAW Vitrification System will
be maintained and operated at all times in a manner so as to minimize the emissions of air

- 1 contaminants and to minimize process upsets. Procedures for ensuring that the air pollution
2 control devices and capture systems in the LAW Vitrification System are properly operated
3 and maintained so as to minimize the emission of air contaminants and process upsets will
4 be established.
- 5 **III.10.H.1.a.xxvi** In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-
6 system names with the sub-system designation.
- 7 **III.10.H.1.a.xxvii** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of
8 this Permit for the LAW Vitrification System will be allowed only in accordance with
9 Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g, III.10.C.9.d, III.10.C.9.e, and
10 III.10.C.9.h.
- 11 **III.10.H.1.a.xxviii** For any portion of the LAW Vitrification System which has the potential for formation and
12 accumulation of hydrogen gases, the Permittees will operate the portion to maintain
13 hydrogen levels below the LEL [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)].
- 14 **III.10.H.1.a.xxix** For each LAW Vitrification System sub-system holding dangerous waste which are acutely
15 or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of
16 vapors, fumes, or other emissions into the air [[WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#) and [WAC 173-
17 303-640\(5\)\(e\)](#), in accordance with [WAC 173-303-680](#)].
- 18 **III.10.H.1.b Performance Standards**
- 19 **III.10.H.1.b.i** The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of
20 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR
21 §63.1203(c)(1), 40CFR 63.1203(c)(2), in accordance with [WAC 173-303-680\(2\)](#)]:
22 RESERVED
23 DRE in this permit condition will be calculated in accordance with the formula given below:
24 $DRE = [1 - (W_{out}/W_{in})] \times 100\%$
25 Where:
26 W_{in} = mass feedrate of one PODC in a waste feed stream; and
27 W_{out} = mass emission rate of the same PODC present in exhaust emissions prior to release to
28 the atmosphere.
- 29 **III.10.H.1.b.ii** Particulate matter emissions from the LAW Vitrification System will not exceed 34
30 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with [WAC 173-303-
31 680\(2\)](#)].
- 32 **III.10.H.1.b.iii** Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System will not
33 exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with [WAC 173-303-
34 680\(2\)](#)].
- 35 **III.10.H.1.b.iv** Dioxin and Furan TEQ emissions from the LAW Vitrification System will not exceed 0.2
36 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with [WAC 173-303-680\(2\)](#)].
- 37 **III.10.H.1.b.v** Mercury emissions from the LAW Vitrification System will not exceed 45 µg/dscm [40 CFR
38 §63.1203(b)(2), in accordance with [WAC 173-303-680\(2\)](#)].
- 39 **III.10.H.1.b.vi** Lead and cadmium emissions from the LAW Vitrification System will not exceed 120
40 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with [WAC 173-303-680\(2\)](#)].

- 1 **III.10.H.1.b.vii** Arsenic, beryllium, and chromium emissions from the LAW Vitrification System will not
2 exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with [WAC 173-303-
3 680\(2\)](#)].
- 4 **III.10.H.1.b.viii** Carbon monoxide (CO) emission from the LAW Vitrification System will not exceed 100
5 parts per million (ppm) by volume, over an hourly rolling average (as measured and
6 recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in
7 accordance with [WAC 173-303-680\(2\)](#)].
- 8 **III.10.H.1.b.ix** Hydrocarbon emission from the LAW Vitrification System will not exceed 10 parts per
9 million (ppm) by volume, over an hourly rolling average (as measured and recorded by the
10 continuous monitoring system during demonstration testing required by this Permit), dry
11 basis, and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with [WAC 173-
12 303-680\(2\)](#)].
- 13 **III.10.H.1.b.x** If the emissions from the LAW Vitrification System exceed the emission rates listed in
14 Permit Table [III.10.H.E](#), as approved pursuant to Permit Condition III.10.C.11.b, the
15 Permittees will notify Ecology in accordance with Permit Condition III.10.H.3.d.vii. [[WAC
16 173-303-680\(2\)](#) and (3), and [WAC 173-303-815\(2\)\(b\)\(ii\)](#)].
- 17 The emission limits specified in Permit Conditions III.10.H.1.b.i through III.10.H.1.b.x above,
18 will be met for the LAW Vitrification System by limiting feed-rates as specified in Permit
19 Tables [III.10.H.D](#) and [III.10.H.F](#), as approved/modified pursuant to Permit Condition
20 III.10.H.5, compliance with operating conditions specified in Permit Condition III.10.H.1.c
21 (except as specified in Permit Condition III.10.H.1.b.xii), and compliance with Permit
22 Condition III.10.H.1.b.xi.
- 23 **III.10.H.1.b.xi** Treatment effectiveness, feedrates and operating rates for dangerous and mixed waste
24 management units contained in the LAW Building, but not included in Permit Table
25 [III.10.H.A](#), as approved/modified pursuant to Permit Condition III.10.H.5, will be as
26 specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions and
27 basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as
28 approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit
29 condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1
30 upon its approval pursuant to either Permit Conditions III.10.C.11.c or III.10.C.11.d [[WAC
31 173-303-680\(2\)](#) and (3), and [WAC 173-303-815\(2\)\(b\)\(ii\)](#)].
- 32 **III.10.H.1.b.xii** Except during periods of LAW Vitrification System startup and shutdown, compliance with
33 the operating conditions specified in Permit Condition III.10.H.1.c, will be regarded as
34 compliance with the required performance standards identified in Permit Conditions
35 III.10.H.1.b.i through x. However, if it is determined that during the effective period of this
36 Permit that compliance with the operating conditions in Permit Condition III.10.H.1.c is not
37 sufficient to ensure compliance with the performance standards specified in Permit
38 Conditions III.10.H.1.b.i through x, the Permit may be modified, revoked, or reissued
39 pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f, or III.10.C.2.g.
- 40 **III.10.H.1.c Operating Conditions [[WAC 173-303-670\(6\)](#), in accordance with [WAC 173-303-680\(2\)](#)
41 and (3)]**
- 42 The Permittees will operate the LAW Vitrification System in accordance with Operating
43 Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition

1 III.10.H.5.e.vi, Operating Unit Group 10, Appendix 9.18 of this Permit, as approved pursuant
2 to Permit Condition III.10.H.5.e, and Operating Unit Group 10, Appendix 9.15 of this Permit,
3 as approved pursuant to Permit Condition III.10.H.5.f, except as modified pursuant to Permit
4 Conditions III.10.H.1.b.xii, III.10.H.2, III.10.H.3, III.10.H.4, and in accordance with the
5 following:

6 **III.10.H.1.c.i** The Permittees will operate the LAW Vitrification System in order to maintain the systems
7 and process parameters listed in Permit Tables [III.10.H.C](#) and [III.10.H.F](#), as
8 approved/modified pursuant to Permit Condition III.10.H.5, within the set-points specified in
9 Permit Table [III.10.H.F](#).

10 **III.10.H.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as
11 approved/modified pursuant to Permit Condition III.10.H.5, to automatically cut-off and/or
12 lock-out the dangerous and mixed waste feed to the LAW Vitrification System when the
13 monitored operating conditions deviate from the set-points specified in Permit Table
14 [III.10.H.F](#).

15 **III.10.H.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as
16 approved/modified pursuant to Permit Condition III.10.H.5, to automatically cut-off and/or
17 lock-out the dangerous and mixed waste feed to the LAW Vitrification System when all
18 instruments specified on Permit Table [III.10.H.F](#) for measuring the monitored parameter fail
19 or exceed its span value.

20 **III.10.H.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as
21 approved/modified pursuant to Permit Condition III.10.H.5, to automatically cut-off and/or
22 lock out the dangerous and/or mixed waste feed to the LAW Vitrification System when any
23 portion of the LAW Vitrification System is bypassed. The terms “bypassed” and “bypass
24 event” as used in Permit Sections [III.10.H](#) and [III.10.I](#) will mean if any portion of the LAW
25 Vitrification System is bypassed so that gases are not treated as during the Demonstration
26 Test.

27 **III.10.H.1.c.v** In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.H.F](#), as
28 approved/modified pursuant to Permit Condition III.10.H.5, the Permittees will immediately,
29 manually cut-off the dangerous and mixed waste feed to the LAW Vitrification System. The
30 Permittees will not restart the dangerous and/or mixed waste feed until the problem causing
31 the malfunction has been identified and corrected.

32 **III.10.H.1.c.vi** The Permittees will manually cutoff the dangerous and mixed waste feed to the LAW
33 Vitrification System when the operating conditions deviate from the limits specified in
34 Permit Condition III.10.H.1.c.i, unless the deviation automatically activates the waste feed
35 cut-off sequence specified in Permit Conditions III.10.H.1.c.ii, III.10.H.1.c.iii, and/or
36 III.10.H.1.c.iv.

37 **III.10.H.1.c.vii** If greater than thirty (30) dangerous and mixed waste feed cutoff, combined, to the LAW
38 Vitrification System occur due to deviations from Permit Table [III.10.H.F](#), as
39 approved/modified pursuant to Permit Condition III.10.H.5, within a sixty (60) day period,
40 the Permittees will submit a written report to Ecology within five (5) calendar days of the
41 thirty-first exceedence including the information specified below. These dangerous and
42 mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or
43 manually activated, are counted if the specified set points are deviated from while dangerous
44 waste, mixed waste, and waste residues continue to be processed in the LAW Vitrification

- 1 System. A cascade event is counted at a frequency of one (1) towards the first waste feed
2 cut-off parameter, specified on Permit Table [III.10.H.F](#), from which the setpoint is deviated:
- 3 A. The parameter(s) that deviated from the setpoint(s) in Permit Table [III.10.H.F](#);
4 B. The magnitude, dates, and durations of the deviations;
5 C. Results of the investigation of the cause of the deviations; and,
6 D. Corrective measures taken to minimize future occurrences of the deviations.
- 7 **III.10.H.1.c.viii** If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or
8 mixed waste it will be regarded as non-compliance with the operating conditions specified in
9 Permit Condition III.10.H.1.c and the performance standards specified in Permit Condition
10 III.10.H.1.b. After such a bypass event, the Permittees will perform the following actions:
- 11 A. Investigate the cause of the bypass event;
12 B. Take appropriate corrective measures to minimize future bypasses;
13 C. Record the investigation findings and corrective measures in the operating record; and
14 D. Submit a written report to Ecology within five (5) days of the bypass event documenting
15 the result of the investigation and corrective measures.
- 16 **III.10.H.1.c.ix** The Permittees will control fugitive emissions from the LAW Vitrification System by
17 maintaining the melters under negative pressure.
- 18 **III.10.H.1.c.x** Except during periods of vitrification system startup and shutdown, compliance with the
19 operating conditions specified in Permit Condition III.10.H.1.c will be regarded as
20 compliance with the required performance standards identified in Permit Condition
21 III.10.H.1.b. However, evidence that compliance with these operating conditions is
22 insufficient to ensure compliance with the performance standards, will justify modification,
23 revocation, or re-issuance of this Permit, in accordance with Permit Conditions [III.10.C.2.e](#)
24 and III.10.C.2.f, or III.10.C.2.g.
- 25 **III.10.H.1.d Inspection Requirements [WAC 173-303-680(3)]**
- 26 **III.10.H.1.d.i** The Permittees will inspect the LAW Vitrification System in accordance with the Inspection
27 Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in
28 accordance with Permit Condition III.10.C.5.c.
- 29 **III.10.H.1.d.ii** The inspection data for LAW Vitrification System will be recorded, and the records will be
30 placed in the WTP Unit operating record for the LAW Vitrification System, in accordance
31 with Permit Condition III.10.C.4.
- 32 **III.10.H.1.d.iii** The Permittees will comply with the inspection requirements specified in Operating Unit
33 Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition
34 III.10.H.5.f, and as modified by Permit Conditions III.10.H.1.b.xii, III.10.H.2, III.10.H.3,
35 and III.10.H.4.
- 36 **III.10.H.1.e Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-
37 670(7) and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]**
- 38 **III.10.H.1.e.i** Upon receipt of a written request from Ecology, the Permittees will perform sampling and
39 analysis of the dangerous and mixed waste and exhaust emissions to verify that the operating
40 requirements established in the Permit achieve the performance standards delineated in this
41 Permit.

- 1 **III.10.H.1.e.ii** The Permittees will comply with the monitoring requirements specified in Operating Unit
2 Group 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant
3 to Permit Conditions III.10.H.5.c, III.10.H.5.d, III.10.H.5.e, and III.10.H.5.f, as modified by
4 Permit Conditions III.10.H.1.b.xii, III.10.H.2, III.10.H.3, and III.10.H.4.
- 5 **III.10.H.1.e.iii** The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon
6 continuous emission monitors (CEM) specified in this Permit in accordance with
7 Performance Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with
8 Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit Group 10 Appendix 9.15
9 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f, and as modified by
10 Permit Conditions III.10.H.1.b.xii, III.10.H.2, III.10.H.3, and III.10.H.4.
- 11 **III.10.H.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit
12 Tables [III.10.H.C](#), and [E](#), as approved/modified pursuant to Permit Condition III.10.H.5, in
13 accordance with Operating Unit Group 10, Appendix 9.15 of this Permit, as approved
14 pursuant to Permit Condition III.10.H.5.f, and as modified by Permit Conditions
15 III.10.H.1.b.xii, III.10.H.2, III.10.H.3, and III.10.H.4.
- 16 **III.10.H.1.f Recordkeeping Requirements [[WAC 173-303-380](#) and [WAC 173-303-680\(3\)](#)]**
- 17 **III.10.H.1.f.i** The Permittees will record and maintain in the WTP Unit operating record for the LAW
18 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data
19 compiled under the conditions of this Permit, in accordance with Permit Conditions
20 III.10.C.4 and [III.10.C.5](#), as modified by Permit Conditions III.10.H.1.b.xii, III.10.H.2,
21 III.10.H.3, and III.10.H.4.
- 22 **III.10.H.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of
23 all automatic waste feed cut-offs and/or lock-outs, including the triggering parameters,
24 reason for the deviation, and recurrence of the incident. The Permittees will also record all
25 incidents of AWFCO system function failures, including the corrective measures taken to
26 correct the condition that caused the failure.
- 27 **III.10.H.1.f.iii** The Permittees will submit to Ecology a report semi-annually the first calendar year, and
28 annually thereafter each calendar year within ninety (90) days following the end of the year.
29 The report will include the following information:
- 30 A. Total dangerous and mixed waste feed processing time for the LAW Vitrification
31 System;
- 32 B. Date/Time of all LAW Vitrification System startups and shutdowns;
- 33 C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System
34 shutdowns caused by malfunction of either process or control equipment; and,
- 35 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or
36 mixed waste feed cut-off due to deviations from Permit Table [III.10.H.F](#), as
37 approved/modified pursuant to Permit Condition III.10.H.5.
- 38 **III.10.H.1.f.iv** The Permittees will submit an annual report to Ecology each calendar year within ninety
39 (90) days following the end of the year of all quarterly CEM Calibration Error and Annual
40 CEM Performance Specification Tests conducted in accordance with Permit Condition
41 III.10.H.1.e.iii.
- 42 **III.10.H.1.g Closure**

The Permittees will close the LAW Vitrification System in accordance with Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.H.2 Shakedown Period [[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), [WAC -173-303-670\(7\)](#), and [WAC 173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]

III.10.H.2.a The shakedown period for the LAW Vitrification System will be conducted in accordance with Permit Condition III.10.H.1, Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f, and as modified in accordance with Permit Conditions III.10.H.1.b.xii, III.10.H.2, and III.10.H.3.

III.10.H.2.b Duration of the Shakedown Period

III.10.H.2.b.i The shakedown period for the LAW Vitrification System will begin with the initial introduction of dangerous waste in the LAW Vitrification System following construction and will end with the start of the demonstration test.

III.10.H.2.b.ii The shakedown period will not exceed the following limits, as defined by hours, when the LAW Vitrification System is processing dangerous waste. The Permittees may petition Ecology for one extension of each shakedown phase for seven hundred and twenty (720) additional operating hours in accordance with Permit modification procedures specified in Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.

Shakedown Phase 1: 720 hours

Shakedown Phase 2: 720 hours

III.10.H.2.b.iii Shakedown Phase 2 will not be commenced until documentation has been submitted to Ecology verifying that the LAW Vitrification System has operated at a minimum of 75% of the shakedown Phase 1 feedrate limit for two (2) separate eight (8) consecutive hour periods with no AWFCOs.

III.10.H.2.c Allowable Waste Feed During the Shakedown Period

III.10.H.2.c.i The Permittees may feed the dangerous waste specified for the LAW Vitrification System on the Part A Forms (Operating Unit Group 10, Addendum A of this Permit), except for those wastes outside the waste acceptance criteria specified in the WAP, Attachment 1, Addendum B of this Permit, as approved pursuant to Permit Condition III.10.C.3, except Permit Conditions III.10.H.2.c.ii through v also apply.

III.10.H.2.c.ii The Permittees will not feed the following wastes to the LAW Vitrification System during Shakedown Phase 1:

- A. Acutely toxic dangerous waste listed in [WAC 173-303-081\(a\)\(2\)\(a\)\(i\)](#); and,
- B. Mixed waste;

III.10.H.2.c.iii The Permittees will not feed the following waste to the LAW Vitrification System during Shakedown Phase 2:

- A. Mixed waste.

III.10.H.2.c.iv The feed-rates to the LAW Vitrification System will not exceed the limits in Permit Tables [III.10.H.D](#) and [III.10.H.F](#), as approved/modified pursuant to Permit Condition III.10.H.5.

- 1 **III.10.H.2.c.v** The Permittees will conduct sufficient analysis of the dangerous waste treated in the LAW
2 Vitrification System to verify that the waste feed is within the physical and chemical
3 composition limits specified in this Permit.
- 4 **III.10.H.3** **Demonstration Test Period** [[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), [WAC 173-303-](#)
5 [670\(7\)](#), and [WAC 173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]
- 6 **III.10.H.3.a** **Demonstration Test Period**
- 7 **III.10.H.3.a.i** The Permittees will operate, monitor, and maintain the LAW Vitrification System as
8 specified in Permit Condition III.10.H.1, and Operating Unit Group 10, Appendix 9.15 of
9 this Permit, as approved pursuant to Permit Condition III.10.H.5.f, except as modified in
10 accordance with Permit Conditions III.10.H.1.b.xii, and III.10.H.3.
- 11 **III.10.H.3.a.ii** Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit
12 Condition III.10.H.5.f, will be resubmitted to Ecology for approval by the Permittees as a
13 permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f at least one
14 hundred and eighty (180) days prior to the start date of the demonstration test. The revised
15 Demonstration Test Plan will include applicable EPA promulgated test methods and
16 procedures in effect at the time of the re-submittal and projected commencement and
17 completion dates for the Demonstration Test.
- 18 **III.10.H.3.a.iii** The Permittees will not commence the demonstration test period until documentation has
19 been submitted to Ecology verifying that the LAW Vitrification System has operated at a
20 minimum of 75% of the demonstration test period feedrate limit for a minimum of an eight
21 (8) consecutive hours period on two (2) consecutive days.
- 22 **III.10.H.3.b** **Performance Standards**
- 23 The Permittees will demonstrate compliance with the performance standards specified in
24 Permit Condition III.10.H.1.b during the Demonstration Test Period.
- 25 **III.10.H.3.c** **Allowable Waste Feed during the Demonstration Test Period**
- 26 **III.10.H.3.c.i** The Permittees may feed the dangerous waste specified for the LAW Vitrification System in
27 Part A Forms (Operating Unit Group 10, Addendum A of this Permit), except for those
28 waste outside the waste acceptance criteria specified in the WAP, Operating Unit Group 10,
29 Addendum B of this Permit, as approved pursuant to Permit Condition III.10.C.3, except
30 Permit Conditions III.10.H.3.c.ii through iv also apply.
- 31 **III.10.H.3.c.ii** The Permittees will not feed mixed waste to the LAW Vitrification System.
- 32 **III.10.H.3.c.iii** The dangerous waste feedrates to the LAW Vitrification System will not exceed the limits in
33 Permit Tables [III.10.H.D](#) and [F](#), as approved/modified pursuant to Permit Condition
34 III.10.H.5.
- 35 **III.10.H.3.c.iv** The Permittees will conduct sufficient analysis of the dangerous waste treated in the LAW
36 Vitrification System to verify that the dangerous waste is within the physical and chemical
37 composition limits specified in this Permit.
- 38 **III.10.H.3.d** **Demonstration Data Submissions and Certifications**
- 39 **III.10.H.3.d.i** The Permittees will submit to Ecology a complete demonstration test report within one
40 hundred eighty (180) calendar days of completion of the Demonstration Test including all

1 data collected during the Demonstration Test and updated Permit Tables [III.10.I.D](#), [III.10.I.E](#)
2 and [III.10.I.F](#).

3 **III.10.H.3.d.ii**

The Permittees must submit the following information to Ecology prior to receiving Ecology's approval to commence feed of dangerous waste and mixed waste to the LAW Vitrification System:

- 6 A. The Permittees will submit a summary of data collected as required by the Demonstration
7 Test Plan to Ecology upon completion of the Demonstration Test;
- 8 B. A certification that the Demonstration Test has been carried out in accordance with the
9 approved Demonstration Test Plan and approved modifications within thirty (30) days of
10 the completion of the Demonstration Test [[WAC 173-303-807\(8\)](#)];
- 11 C. Calculations and analytical data showing compliance with the performance standards
12 specified in Permit Conditions III.10.H.1.b.i, III.10.H.1.b.iv, III.10.H.1.b.v,
13 III.10.H.1.b.vi, and III.10.H.1.b.vii; and,
- 14 D. Laboratory data QA/QC summary for the information provided in
15 III.10.H.3.d.ii.C.

16 **III.10.H.3.d.iii**

After successful completion of the Demonstration Test and receipt of Ecology's approval, the Permittees will be authorized to commence feed of dangerous waste and mixed waste to the LAW Vitrification System for the post-demonstration test period indicated in Permit Tables [III.10.H.D](#) and [E](#), as approved/modified pursuant to Permit Condition III.10.H.5, in compliance with the operating requirements specified in Permit Condition III.10.H.1.c and within the limitations specified in Permit Condition III.10.C.14.

22 **III.10.H.3.d.iv**

Reserved

23 **III.10.H.3.d.v**

After successful completion of the Demonstration Test, Permittees submittal of the following to Ecology and the Permittees receipt of approval of the following in writing, the Permittees will be authorized to feed dangerous waste and mixed waste to the LAW Vitrification System pursuant to Permit Section [III.10.I](#).

- 27 A. A complete Demonstration Test Report for the LAW Vitrification System and updated
28 Permit Tables [III.10.I.D](#), [III.10.I.E](#), and [III.10.I.F](#), as approved/modified pursuant to
29 Permit Conditions III.10.H.5 and III.10.C.11.c or III.10.C.11.d. The test report will be
30 certified in accordance with [WAC 173-303-807\(8\)](#), in accordance with [WAC 173-303-](#)
31 [680\(2\)](#) and (3); and,
- 32 B. A Final Risk Assessment Report completed pursuant to Permit Conditions III.10.C.11.c
33 or III.10.C.11.d.

34 **III.10.H.3.d.vi**

If any calculations or testing results show that one or more of the performance standards listed in Permit Condition III.10.H.1.b, with the exception of Permit Condition III.10.H.1.b.x, for the LAW Vitrification System were not met during the Demonstration Test, the Permittees will perform the following actions:

- 38 A. Immediately stop dangerous and mixed waste feed to the LAW Vitrification System
39 under the mode of operation that resulted in not meeting the performance standard(s);
- 40 B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
41 performance standard(s) as specified in Permit Condition I.E.21;

- 1 C. Investigate the cause of the failure and submit a report of the investigation findings to
2 Ecology within fifteen (15) days of discovery of not meeting the performance
3 standard(s);
- 4 D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
5 standard(s), documentation supporting a mode of operation where all performance
6 standards listed in Permit Condition III.10.H.1.b, with the exception of Permit Condition
7 III.10.H.1.b.x, for the LAW Vitrification System were met during the demonstration test,
8 if any such mode was demonstrated;
- 9 E. Based on the information provided to Ecology by the Permittees pursuant to Permit
10 Conditions III.10.H.3.d.vi A through D above, and any additional information, Ecology
11 may provide in writing, direction to the Permittees to stop dangerous and/or mixed waste
12 feed to the LAW Vitrification System and/or amend the mode of operation the Permittees
13 are allowed to continue operations prior to Ecology approval of a compliance schedule
14 and/or revised Demonstration Test Plan pursuant to Permit Conditions III.10.H.3.d.vi.F
15 and G.
- 16 F. If the performance standard listed in Permit Condition III.10.H.1.b.i was not met during
17 the Demonstration Test, the Permittees will submit within one hundred and twenty (120)
18 days of discovery of not meeting the performance standard, a revised Demonstration Test
19 Plan (if appropriate), and a compliance schedule for Ecology approval to address this
20 deficiency. If a revised Demonstration Test Plan is submitted, it will be accompanied by
21 a request for approval to retest as a permit modification pursuant to Permit Conditions
22 [III.10.C.2.e](#) and III.10.C.2.f. The revised Demonstration Test Plan (if submitted) must
23 include substantive changes to prevent failure from reoccurring.
- 24 G. If any of the performance standards listed in Permit Condition III.10.H.1.b, with the
25 exception of Permit Conditions III.10.H.1.b.i or III.10.H.1.b.x, were not met during the
26 Demonstration Test the Permittees will submit to Ecology within one hundred twenty
27 (120) days of discovery of not meeting the performance standard(s), a revised
28 Demonstration Test Plan requesting approval to retest as a permit modification pursuant
29 to Permit Conditions III.10.C.2.e and III.10.C.2.f. The revised Demonstration Test Plan
30 must include substantive changes to prevent failure from reoccurring.

31 **III.10.H.3.e**

32 If any calculations or testing results show that any emission rate for any constituent listed in Permit
33 Table [III.10.H.E](#), as approved pursuant to Permit Condition III.10.C.11.b, is exceeded for LAW
34 Vitrification System during the Demonstration Test, the Permittees will perform the following
actions:

- 35 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
36 emission rate(s) as specified in Permit Condition I.E.21.
- 37 B. Submit to Ecology additional risk information to indicate that the increased emissions impact is
38 offset by decreased emission impact from one or more constituents expected to be emitted at the
39 same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and
40 submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery
41 of exceeding the emission rate(s); and,
- 42 C. Based on the notification and any additional information, Ecology may provide, in writing,
43 direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification
44 System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to

1 Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f, or III.10.C.2.g. The revised Demonstration Test
2 Plan must include substantive changes to prevent failure from reoccurring.

3 **III.10.H.4 Post Demonstration Test Period [[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), and [WAC](#)**
4 **[173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]**

5 **III.10.H.4.a** The Permittees will operate, monitor, and maintain the LAW Vitrification System as specified in
6 Permit Condition III.10.H.1 and Operating Unit Group 10, Appendix 9.15 of this Permit, as
7 approved pursuant to Permit Condition III.10.H.5, except as modified in accordance with Permit
8 Conditions III.10.H.1.b.xii, III.10.H.3, and III.10.H.4.

9 **III.10.H.4.b Allowable Waste Feed during the Post-Demonstration Test Period**

10 **III.10.H.4.b.i** The Permittees may feed the dangerous and/or mixed waste specified for the LAW
11 Vitrification System on the Part A Forms (Operating Unit Group 10, Addendum A of this
12 Permit), except for those wastes outside the waste acceptance criteria specified in the WAP,
13 Operating Unit Group 10, Addendum B of this Permit, as approved pursuant to Permit
14 Condition III.10.C.3, and except Permit Conditions III.10.H.4.b.ii and III.10.H.4.b.iii also
15 apply.

16 **III.10.H.4.b.ii** The dangerous waste and mixed waste feedrates to the LAW Vitrification System will not
17 exceed the limits in Permit Tables [III.10.H.D](#) and [E](#), as approved/modified pursuant to
18 Permit Condition III.10.H.5, or in Permit Condition III.10.H.3

19 **III.10.H.4.b.iii** The Permittees will conduct sufficient analysis of the dangerous waste and mixed waste
20 treated in LAW Vitrification System to verify that the waste feed is within the physical and
21 chemical composition limits specified in this Permit.

22 **III.10.H.5 Compliance Schedules**

23 **III.10.H.5.a** All information identified for submittal to Ecology in III.10.H.5.a through III.10.H.f of this
24 compliance schedule must be signed and certified in accordance with requirements in [WAC 173-](#)
25 [303-810\(12\)](#), as modified in accordance with Permit Condition III.10.H.1.a.iii. [[WAC 173-303-](#)
26 [806\(4\)](#)].

27 **III.10.H.5.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
28 construction of each secondary containment and leak detection system for the LAW Vitrification
29 System (per level) as identified in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), engineering information
30 as specified below, for incorporation into Operating Unit Group 10, Appendices 9.2 , 9.4, 9.5, 9.7,
31 9.8, 9.9, 9.11, and 9.12 of this Permit. At a minimum, engineering information specified below will
32 show the following as described in [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#) (the
33 information specified below will include dimensioned engineering drawings and information on
34 sumps and floor drains):

35 **III.10.H.5.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system)
36 will include review of design drawings, calculations, and other information on which the
37 certification report is based and will include as applicable, but not limited to, review of such
38 information described below. Information (drawings, specifications, etc.) already included
39 in Operating Unit Group 10, Appendix 9.0 of this Permit, may be included in the report by
40 reference and should include drawing and document numbers. IQRPE Reports will be
41 consistent with the information separately provided in III.10.H.5.b.ii through ix. below

- 1 [\[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
2 [806\(4\)\(i\)\(i\)](#)];
- 3 **III.10.H.5.b.ii** Design drawings (GA Drawings, in plan and cross sections) and specifications for the
4 foundation, secondary containment including liner installation details, and leak detection
5 methodology. These items should show the dimensions, volume calculations, and location
6 of the secondary containment system, and should include items such as floor/pipe slopes to
7 sumps, tanks, floor drains [[WAC 173-303-640\(4\)\(b\)](#) through (f) and [WAC 173-303-](#)
8 [640\(3\)\(a\)](#), in accordance with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 9 **III.10.H.5.b.iii** The Permittees will provide the design criteria (references to codes and standards, load
10 definitions, and load combinations, materials of construction, and analysis/design
11 methodology) and typical design details for the support of the secondary containment
12 system. This information will demonstrate the foundation will be capable of providing
13 support to the secondary containment system, resistance to pressure gradients above and
14 below the system, and capable of preventing failure due to settlement, compression, or uplift
15 [[WAC 173-303-640\(4\)\(c\)\(ii\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-](#)
16 [806\(4\)\(i\)\(i\)\(B\)](#)];
- 17 **III.10.H.5.b.iv** A description of materials and equipment used to provide corrosion protection for external
18 metal components in contact with soil, including factors affecting the potential for corrosion
19 [[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#), in accordance with [WAC 173-303-680](#) and [WAC 173-](#)
20 [303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 21 **III.10.H.5.b.v** Secondary containment/foundation, and leak detection system, materials selection
22 documentation (including, but not limited to, concrete coatings and water stops, and liner
23 materials) as applicable [[WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 24 **III.10.H.5.b.vi** Detailed description of how the secondary containment for the LAW Vitrification System
25 will be installed in compliance with [WAC 173-303-640\(3\)\(c\)](#), in accordance with [WAC 173-](#)
26 [303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B);
- 27 **III.10.H.5.b.vii** Submit Permit Tables [III.10.H.B](#) and [III.10.I.B](#) completed to provide for all secondary
28 containment sumps and floor drains the information as specified in each column heading
29 consistent with information to be provided in III.10H.5.b.i. through vi., above;
- 30 **III.10.H.5.b.viii** Documentation that secondary containment and leak detection systems will not accumulate
31 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
32 [173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)]; and,
- 33 **III.10.H.5.b.ix** A detailed description of how LAW Vitrification System design provides access for
34 conducting future LAW Vitrification System integrity assessments [[WAC 173-303-](#)
35 [640\(3\)\(b\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)].
- 36 **III.10.H.5.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation
37 of each sub-system as identified in Permit Table [III.10.H.A](#), engineering information as specified
38 below, for incorporation into Operating Unit Group 10, Appendices 9.1 through 9.14, and 9.17 of
39 this Permit. At a minimum, engineering information specified below will show the following, as
40 required pursuant to [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#) (the information
41 specified below will include dimensioned engineering drawings):

- 1 **III.10.H.5.c.i** IQRPE Reports (specific to sub-system) will include review of design drawings,
2 calculations, and other information on which the certification report is based and will include
3 as applicable, but not limited to, review of such information described below. Information
4 (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 9.0
5 of this Permit, may be included in the report by reference and should include drawing and
6 document numbers. The IQRPE Reports will be consistent with the information separately
7 provided in III.10.H.5.c.ii. through xii below, and the IQRPE Report specified in Permit
8 Condition III.10.H.5.b [\[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#)
9 and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 10 **III.10.H.5.c.ii** Design drawings [GA Drawings in plan and cross section, PDF, P&IDs (including pressure
11 control systems), mechanical drawings, and specifications, and other information specific to
12 subsystems (to show location and physical attributes of each subsystem)] [\[WAC 173-303-](#)
13 [640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 14 **III.10.H.5.c.iii** Sub-system design criteria (references to codes and standards, load definitions, and load
15 combinations, materials of construction, and analysis/design methodology) and typical
16 design details to support the subsystems. Structural support calculations specific to off-
17 specification, non-standard and field fabricated subsystems will be submitted for
18 incorporation into the Administrative Record. Documentation will include but not limited
19 to, supporting specifications, test data, treatment effectiveness report, etc. supporting
20 projected operational capability (e.g., WESP projected removal efficiency for individual
21 metals, halogens, particulates, etc.) and compliance with performance standards specified in
22 Permit Condition III.10.H.1.b [\[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-](#)
23 [680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 24 **III.10.H.5.c.iv** A description of materials and equipment used to provide corrosion protection for external
25 metal components in contact with water, including factors affecting the potential for
26 corrosion [\[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#), in accordance with [WAC 173-303-680\(2\)](#) and
27 [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 28 **III.10.H.5.c.v** Sub-system materials selection documentation (e.g., physical and chemical tolerances)
29 [\[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-](#)
30 [806\(4\)\(i\)\(i\)\(A\)](#)];
- 31 **III.10.H.5.c.vi** Sub-system vendor information (including, but not limited to, required performance
32 warranties, as available), consistent with information submitted under III.10.H.5.c.ii, above,
33 will be submitted for incorporation into the Administrative Record [\[WAC 173-303-](#)
34 [640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through
35 (B), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 36 **III.10.H.5.c.vii** System descriptions related to sub-system units will be submitted for incorporation into the
37 Administrative Record [\[WAC 173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and
38 [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 39 **III.10.H.5.c.viii** Mass and energy balance for normal projected operating conditions used in developing the
40 P&IDs and PFDs, including assumptions and formulas used to complete the mass and
41 energy balance, so that they can be independently verified for incorporation into the
42 Administrative Record [\[WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC](#)
43 [173-303-806\(4\)\(i\)\(v\)](#)];

- 1 **III.10.H.5.c.ix** Detailed description of all potential LAW Vitrification System bypass events including:
2 A. A report which includes an analysis of credible potential bypass events and
3 recommendations for prevention/minimization of the potential, impact, and frequency of
4 the bypass event to include at a minimum:
5 1. Operating procedures;
6 2. Maintenance procedures;
7 3. Redundant equipment;
8 4. Redundant instrumentation;
9 5. Alternate equipment; and,
10 6. Alternate materials of construction;
- 11 **III.10.H.5.c.x** A detailed description of how the sub-systems will be installed in compliance with [WAC](#)
12 [173-303-640\(3\)\(c\)](#), (d), and (e), in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
13 [806\(4\)\(i\)\(i\)\(B\)](#);
- 14 **III.10.H.5.c.xi** Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic
15 (upon inhalation) EHW, for incorporation into the Administrative Record [[WAC 173-303-](#)
16 [640\(5\)\(e\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#);
17 and,
- 18 **III.10.H.5.c.xii** Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases
19 levels above the LEL for incorporation into the Administrative Record [[WAC 173-303-680](#),
20 [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)].
- 21 **III.10.H.5.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation
22 of equipment for each sub-system as identified in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), not
23 addressed in Permit Conditions III.10.H.5.b or III.10.H.5.c, engineering information as specified
24 below, for incorporation into Operating Unit Group 10, Appendices 9.1 through 9.14 of this Permit.
25 At a minimum, engineering information specified below will show the following as required
26 pursuant to [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#) (the information specified
27 below will include dimensioned engineering drawings):
- 28 **III.10.H.5.d.i** IQRPE Reports (specific to sub-system equipment) will include a review of design drawings,
29 calculations, and other information as applicable on which the certification report is based.
30 The reports will include, but not be limited to, review of such information described below.
31 Information (drawings, specifications, etc.) already included in Operating Unit Group 10,
32 Appendix 9.0 of this Permit, may be included in the report by reference and should include
33 drawing and document numbers. The IQRPE Reports will be consistent with the
34 information provided separately in III.10.H.5.d ii through xiii below and the IQRPE Reports
35 specified in Permit Conditions III.10.H.5.b and III.10.H.5.c [[WAC 173-303-640\(3\)\(a\)](#)], in
36 accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 37 **III.10.H.5.d.ii** Design drawings [PFDs, P&IDs (including pressure control systems), specifications and
38 other information specific to equipment (these drawings should include all equipment such
39 as pipes, valves, fittings, pumps, instruments, etc.)] [[WAC 173-303-640\(3\)\(a\)](#)], in accordance
40 with [WAC 173-303-680\(2\)](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];
- 41 **III.10.H.5.d.iii** Sub-system equipment design criteria (references to codes and standards, load definitions,
42 and load combinations, materials of construction, and analysis/design methodology) and

- 1 typical design details for the support of the sub-system equipment [[WAC 173-303-640\(3\)\(a\)](#)
2 and [WAC 173-303-640\(3\)\(f\)](#)], in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
3 [806\(4\)\(i\)\(i\)\(B\)](#)];
- 4 **III.10.H.5.d.iv** A description of materials and equipment used to provide corrosion protection for external
5 metal components in contact with soil and water, including factors affecting the potential for
6 corrosion [[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and
7 [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)];
- 8 **III.10.H.5.d.v** Materials selection documentation for equipment for each sub-system (e.g., physical and
9 chemical tolerances) [[WAC 173-303-640\(3\)\(a\)](#)], in accordance with [WAC 173-303-680\(2\)](#)
10 and [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#)];
- 11 **III.10.H.5.d.vi** Vendor information (including, but not limited to, required performance warranties, as
12 available), consistent with information submitted under ii, above, for sub-system equipment
13 will be submitted for incorporation into the Administrative Record. [[WAC 173-303-](#)
14 [640\(3\)\(a\)](#)], in accordance with [WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through
15 (B), and [WAC 173-303-806\(4\)\(i\)\(iv\)](#)];
- 16 **III.10.H.5.d.vii** Sub-system, sub-system equipment, and leak detection system instrument control logic
17 narrative description (e.g., software functional specifications, descriptions of fail-safe
18 conditions, etc.) [[WAC 173-303-680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-](#)
19 [806\(4\)\(i\)\(v\)](#)].
- 20 **III.10.H.5.d.viii** System description related to sub-system equipment, and system descriptions related to leak
21 detection systems, for incorporation into the Administrative Record [[WAC 173-303-680](#),
22 [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 23 **III.10.H.5.d.ix** A detailed description of how the sub-system equipment will be installed and tested [[WAC](#)
24 [173-303-640\(3\)\(c\)](#) through (e), [WAC 173-303-640\(4\)\(b\)](#) and (c), in accordance with [WAC](#)
25 [173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 26 **III.10.H.5.d.x** For process monitoring, control, and leak detection system instrumentation for the LAW
27 Vitrification System as identified in Permit Tables [III.10.H.C.](#) and [III.10.H.F.](#), a detailed
28 description of how the process monitoring, control, and leak detection system
29 instrumentation, will be installed and tested [[WAC 173-303-640\(3\)\(c\)](#) through (e), [WAC](#)
30 [173-303-640\(4\)\(b\)](#) and (c), [WAC 173-303-806\(4\)\(c\)\(vi\)](#), and [WAC 173-303-](#)
31 [806\(4\)\(i\)\(i\)\(B\)](#)];
- 32 **III.10.H.5.d.xi** Mass and energy balance for projected normal operating conditions used in developing the
33 Piping and Instrumentation Diagrams and Process Flow Diagrams, including assumptions
34 and formulas used to complete the mass and energy balance, so that they can be
35 independently verified, for incorporation into the Administrative Record [[WAC 173-303-](#)
36 [680\(2\)](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 37 **III.10.H.5.d.xii** Documentation that sub-systems equipment are designed to prevent the accumulation of
38 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
39 [173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 40 **III.10.H.5.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent with
41 information submitted under Permit Condition III.10.H.5.c.ii and Permit Conditions

1 III.10.H.5.d.ii, vii, viii, and x, above, will be submitted for incorporation into the
2 Administrative Record.

3 **III.10.H.5.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit
4 to Ecology, pursuant to Permit Condition III.10.C.9.f, the following as specified below for
5 incorporation into Operating Unit Group 10, Appendix 9.18 of this Permit, except Permit Condition
6 III.10.H.5.e.i, which will be incorporated into Operating Unit Group 10, Addendum E of this Permit.
7 All information provided under this permit condition must be consistent with information provided
8 pursuant to Permit Conditions III.10.H.5.b - f, III.10.C.3.e and III.10.C.11.b, as approved by
9 Ecology:

10 **III.10.H.5.e.i** Integrity assessment program and schedule for the LAW Vitrification System will address
11 the conducting of periodic integrity assessments on the LAW Vitrification System over the
12 life of the system, as specified in Permit Condition III.10.H.5.b.ix and [WAC 173-303-](#)
13 [640\(3\)\(b\)](#), in accordance with [WAC 173-303-680](#), and descriptions of procedures for
14 addressing problems detected during integrity assessments. The schedule must be based on
15 past integrity assessments, age of the system, materials of construction, characteristics of the
16 waste, and any other relevant factors [[WAC 173-303-640\(3\)\(b\)](#), in accordance with [WAC](#)
17 [173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];

18 **III.10.H.5.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is operated so that
19 it will detect the failure of either the primary or secondary containment structure or the
20 presence of any release of dangerous and/or mixed waste or accumulated liquid in the
21 secondary containment system within twenty-four (24) hours [[WAC 173-303-640\(4\)\(c\)\(iii\)](#)].
22 Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined
23 as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria
24 must be approved by Ecology in accordance with [WAC 173-303-680](#), [WAC 173-303-](#)
25 [640\(4\)\(c\)\(iii\)](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(b\)](#);

26 **III.10.H.5.e.iii** Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and
27 accumulated liquids can be removed from the secondary containment system within twenty-
28 four (24) hours [[WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];

29 **III.10.H.5.e.iv** Descriptions of operational procedures demonstrating appropriate controls and practices are
30 in place to prevent spills and overflows from the LAW Vitrification System or containment
31 systems in compliance with [WAC 173-303-640\(5\)\(b\)\(i\)](#) through (iii), in accordance with
32 [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#);

33 **III.10.H.5.e.v** Description of procedures for investigation and repair of the LAW Vitrification System
34 [[WAC 173-303-640\(6\)](#) and [WAC 173-303-640\(7\)\(e\)](#) and (f), in accordance with [WAC 173-](#)
35 [303-680](#), [WAC 173-303-320](#), [WAC 173-303-806\(4\)\(a\)\(v\)](#), and [WAC 173-303-](#)
36 [806\(4\)\(a\)\(ii\)\(B\)](#)];

37 **III.10.H.5.e.vi** Updated Addendum C, Narrative Description, Tables and Figures as identified in Permit
38 Tables [III.10.H.A](#) and [III.10.H.B](#), as modified pursuant to Permit Condition [III.10.H.5.e.x](#).
39 and updated to identify routinely non-accessible LAW Vitrification sub-systems;

40 **III.10.H.5.e.vii** Description of procedures for management of ignitable and reactive, and incompatible
41 dangerous and/or mixed waste as specified in [WAC 173-303-640\(9\)](#) and (10), in accordance
42 with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#).

- 1 **III.10.H.5.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated
2 throughout the LAW Vitrification system, pursuant to [WAC 173-303-380](#).
- 3 **III.10.H.5.e.ix** Permit Tables [III.10.H.C](#) and [III.10.I.C](#) will be completed for LAW Vitrification System
4 process and leak detection system monitors and instruments (to include, but not be limited
5 to: instruments and monitors measuring and/or controlling flow, pressure, temperature,
6 density, pH, level, humidity, and emissions) to provide the information as specified in each
7 column heading. Process and leak detection system monitors and instruments for critical
8 systems as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to
9 Permit Condition III.10.C.9.b, and for operating parameters as required to comply with
10 Permit Condition III.10.C.3.e.iii will be addressed. Process monitors and instruments for
11 non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling
12 waters, etc.) are excluded from this permit condition [[WAC 173-303-680](#), [WAC 173-303-](#)
13 [806](#)(4)(i)(i)(A) through (B), and [WAC 173-303-806](#)(4)(i)(v)]; and,
- 14 **III.10.H.5.e.x** Permit Tables [III.10.H.A](#) and [III.10.I.A](#) amended as follows [[WAC 173-303-680](#) and [WAC](#)
15 [173-303-806](#)(4)(i)(i)(A) through (B)]:
- 16 A. Under column 1, update and complete list of dangerous and mixed waste LAW
17 Vitrification System sub-systems, including plant items that comprise each system (listed
18 by item number);
- 19 B. Under column 2, update and complete system designations;
- 20 C. Under column 3, replace the ‘Reserved’ with Operating Unit Group 10, Appendix 9.0
21 subsections (e.g., 9.1, 9.2, etc.) designated in Permit Conditions III.10.H.5.b, c, and d
22 specific to LAW Vitrification System sub-system as listed in column 1; and,
- 23 D. Under column 4, update and complete list of narrative descriptions, tables, and figures.
- 24 **III.10.H.5.f** One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the
25 WTP Unit, the Permittees will submit for review and receive approval for incorporation into
26 Operating Unit Group 10, Appendix 9.15 of this Permit, a Demonstration Test Plan for the LAW
27 Vitrification System to demonstrate that the LAW Vitrification Systems meets the performance
28 standards specified in Permit Condition III.10.H.1.b. In order to incorporate the Demonstration Test
29 Plan for the LAW Vitrification System into Operating Unit Group 10, Appendix 9.15, Permit
30 Condition III.10.C.2.g process will be followed. The Demonstration Test Plan will include, but not
31 be limited to, the following information. The Demonstration Test Plan will also be consistent with
32 the information provided pursuant to Permit Conditions III.10.H.5.b, c, d, and e, III.10.C.3.e, and
33 III.10.C.11.b, as approved by Ecology and consistent with the schedule described in Operating Unit
34 Group 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition
35 III.10.H.5.f.x, in addition to being incorporated into Operating Unit Group 10, Appendix 9.15, will
36 be incorporated by reference in Operating Unit Group 10, Addendum E of this Permit.
- 37 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan: “Guidance*
38 *on Setting Permit Conditions and Reporting Trial Burn Results Volume II of the Hazardous Waste*
39 *Incineration Guidance Series,” (EPA/625/6-89/019) and Risk Burn Guidance For Hazardous Waste*
40 *Combustion Facilities,” (EPA-R-01-001, July 2001), [WAC 173-303-807](#)(2), [WAC 173-303-670](#)(5),*
41 *[WAC-173-303-670](#)(6), 40 CFR §63.1207(f)(2), 40 CFR §63.1209, and Appendix to 40 CFR Part 63*
42 *EEE.*

1 (2) Cross-referencing to the information provided pursuant to Permit Conditions III.H.5.b, c, d, e,
2 and III.10.C.3.e.v, as approved by Ecology, that are redundant to elements of the Demonstration
3 Test Plan for the LAW Vitrification System is acceptable.

4 **III.10.H.5.f.i**

5 Analysis of each feed-stream to be fed during the demonstration test, including dangerous
6 waste, glass formers and reductants, process streams (e.g., volumes of air leakage including
7 control air, process air, steam, sparge bubbler air, air in-leakage from melter cave, and gases
8 from LAW Vitrification Vessel Ventilation System, process water, etc.) that includes:

9 A. Levels of ash, metals, total chlorine (organic and inorganic), other halogens and
10 radionuclide surrogates;

11 B. Description of the physical form of the feed-streams; and,

12 C. An identification and quantification of organics that are present in the feed-stream,
13 including constituents proposed for DRE demonstration;

14 A comparison of the proposed demonstration test feed streams to the mixed waste feed
15 envelopes to be processed in the melters must be provided that documents that the proposed
16 demonstration test feed streams will serve as worst case surrogates for organic destruction,
17 formation of products of incomplete oxidation, and metals, total chlorine (organic and
18 inorganic), other halogens, particulate formation, and radionuclides;

18 **III.10.H.5.f.ii**

19 Specification of trial PODCs for which destruction and removal efficiencies are proposed to
20 be calculated during the demonstration test and for inclusion in Permit Conditions
21 III.10.H.1.b.i and III.10.I.1.b.i. These trial PODCs will be specified based on destructibility,
22 concentration or mass in the waste and the dangerous waste constituents or constituents in
[WAC 173-303-9905](#);

23 **III.10.H.5.f.iii**

24 A description of the blending procedures, prior to introducing the feed-streams into the
25 melter, including analysis of the materials prior to blending, and blending ratios;

26 **III.10.H.5.f.iv**

27 A description of how the surrogate feeds are to be introduced for the demonstration. This
28 description should clearly identify the differences and justify how any of differences would
29 impact the surrogate feed introduction as representative of how mixed waste feeds will be
30 introduced;

31 **III.10.H.5.f.v**

32 A detailed engineering description of the LAW Vitrification System, including:

33 A. Manufacturer's name and model number for each sub-system;

34 B. Design capacity of each sub-system including documentation (engineering calculations,
35 manufacturer/vendor specifications, operating data, etc.) supporting projected operational
36 efficiencies (e.g., WESP projected removal efficiency for individual metals, halogens,
37 particulates, etc.) and compliance with performance standards specified in Permit
38 Condition III.10.H.1.b.;

39 C. Detailed scaled engineering drawings, including PFDs, P&IDs, Vessel Drawings (plan,
40 and elevation with cross sections) and GA Drawings;

41 D. Process Engineering Descriptions;

42 E. Mass and energy balance for each projected operating condition and each demonstration
test condition, including assumptions and formulas used to complete the mass and energy
balance, so that they can be independently verified for incorporation into the
Administrative Record;

- 1 F. Engineering Specifications/data sheets (materials of construction, physical and chemical
2 tolerances of equipment, and fan curves);
- 3 G. Detailed Description of Automatic Waste Feed Cutoff System addressing critical
4 operating parameters for all performance standards specified in Permit Condition
5 III.10.H.1.b;
- 6 H. Documentation to support compliance with performance standards specified in Permit
7 Condition III.10.H.1.b, including engineering calculations, test data, and
8 manufacturer/vendor's warranties, etc.;
- 9 I. Detailed description of the design, operation, and maintenance practices for air pollution
10 control system;
- 11 J. Detailed description of the design, operation, and maintenance practices of any stack gas
12 monitoring and pollution control monitoring system;
- 13 K. Documentation based on current WTP Unit design either confirming the Permittees'
14 demonstration that it is not technically appropriate to correct standards listed in Permit
15 Conditions III.10.H.1.b.ii through III.10.H.1.b.ix to seven (7) percent oxygen, or a
16 request, pursuant to Permit Conditions III.10.C.9.e and III.10.C.9.f, to update Permit
17 Conditions III.10.H.1.b.ii through III.10.H.1.b.ix, III.10.I.b.ii through III.10.I.b.ix,
18 III.10.I.1.e.iii, and III.10.H.1.e.iii, Permit Tables [III.10.H.C](#), [III.10.H.F](#), [III.10.I.C](#),
19 [III.10.I.F](#) and Operating Unit Group 10, Appendix 9.0 to reflect the addition of an oxygen
20 monitor and the correction of the standards to seven percent (7%) oxygen;

21 **III.10.H.5.f.vi**

- 22 Detailed description of sampling and monitoring procedures including sampling and
23 monitoring locations in the system, the equipment to be used, sampling and monitoring
24 frequency, and planned analytical procedures for sample analysis including, but not limited
25 to:
- 26 A. A short summary narrative description of each stack sample method should be included
27 within the main body of the demonstration test plan, which references an appendix to the
28 plan that would include for each sampling train: (1) detailed sample method procedures,
29 (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4) detailed
30 analytical method procedures, and (5) sampling preparation and analysis flow sheet. The
31 detailed procedures should clearly flag where the method has provided decision points
32 (e.g., choices of equipment materials of construction, choices of clean-up procedures or
33 whether additional clean-up procedures will be incorporated, whether pretest surveys or
34 laboratory validation work will be performed, enhancements to train to accommodate
35 high moisture content in stack gas, etc.) and what is being proposed along with the basis
36 for the decision;
 - 37 B. A short summary narrative description of the feed and residue sampling methods should
38 be included within the main body of the demonstration test plan, which references an
39 appendix that would include for each sample type: (1) detailed sample method
40 procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical
41 method procedures. The detailed procedures should clearly flag where the method has
42 provided decision points (e.g., choices of equipment materials of construction, choices of
43 clean-up procedures or whether additional clean-up procedures will be incorporated,
44 whether pretest surveys or laboratory validation work will be performed, etc.) and what is
being proposed along with the basis for the decision;

- 1 **III.10.H.5.f.vii** A detailed test schedule for each condition for which the demonstration test is planned,
2 including projected date(s), duration, quantity of dangerous waste to be fed, and other
3 relevant factors;
- 4 **III.10.H.5.f.viii** A detailed test protocol including, for each test condition, the ranges of feedrate for each
5 feed system, and all other relevant parameters that may affect the ability of the LAW
6 Vitrification System to meet performance standards specified in Permit Condition
7 III.10.H.1.b;
- 8 **III.10.H.5.f.ix** A detailed description of planned operating conditions for each demonstration test condition,
9 including operating conditions for shakedown, demonstration test, post-demonstration test
10 and normal operations. This information will also include submittal of Permit Tables
11 [III.10.H.D](#), [III.10.H.F](#), [III.10.I.D](#), and [III.10.I.F](#) completed with the information as specified
12 in each column heading for each LAW Vitrification System waste feed cutoff parameter and
13 submittal of supporting documentation for Permit Tables [III.10.H.D](#), [III.10.H.F](#), [III.10.I.D](#),
14 and [III.10.I.F](#) set-point values;
- 15 **III.10.H.5.f.x** The test conditions proposed must demonstrate meeting the performance standards specified
16 in Permit Condition III.10.H.1.b with the simultaneous operation of both melters at capacity
17 and input from the LAW Vitrification Vessel Ventilation System at capacity to simulate
18 maximum loading to the LAW Vitrification System off-gas treatment system and to
19 establish the corresponding operating parameter ranges. To the extent that operation of one
20 (1) melter or two (2) melters cannot be sustained within the operating parameter range
21 established at this maximum load, additional demonstration test conditions must be included
22 in the plan and performed to establish operating parameter ranges for each proposed
23 operating mode while demonstrating meeting the performance standards specified in Permit
24 Condition III.10.H.1.b;
- 25 **III.10.H.5.f.xi** Detailed description of procedures for start-up and shutdown of waste feed and controlling
26 emissions in the event of an equipment malfunction, including off-normal and emergency
27 shutdown procedures;
- 28 **III.10.H.5.f.xii** A calculation of waste residence time;
- 29 **III.10.H.5.f.xiii** Any request to extrapolate metal feed-rate limits from Demonstration Test levels must
30 include:
- 31 A. A description of the extrapolation methodology and rationale for how the approach
32 ensures compliance with the performance standards as specified in Permit Condition
33 III.10.H.1.b;
- 34 B. Documentation of the historical range of normal metal feed-rates for each feed stream;
35 and,
- 36 C. Documentation that the level of spiking recommended during the demonstration test will
37 mask sampling and analysis imprecision and inaccuracy to the extent that extrapolation of
38 feed-rates and emission rates from the Demonstration Test data will be as accurate and
39 precise as if full spiking were used;

- 1 **III.10.H.5.f.xiv** Documentation of the expected levels of constituents in LAW Vitrification System input
2 streams including, but not limited to, waste feed, glass former and reactants, control air,
3 process air, steam, sparge bubbler air, air in-leakage from melter cave, gases from LAW
4 Vitrification Vessel Ventilation System, and process water;
- 5 **III.10.H.5.f.xv** Documentation justifying the duration of the conditioning required to ensure the LAW
6 Vitrification System had achieved steady-state operations under Demonstration Test
7 operating conditions;
- 8 **III.10.H.5.f.xvi** Documentation of LAW Vitrification System process and leak detection system instruments
9 and monitors as listed on Permit Tables [III.10.H.C](#), [III.10.H.F](#), [III.10.I.C](#), and [III.10.I.F](#) to
10 include:
11 A. Procurement specifications;
12 B. Location used;
13 C. Range, precision, and accuracy;
14 D. Detailed descriptions of calibration/functionality test procedures (either method number
15 ASTM) or provide a copy of manufacturer's recommended calibration procedures;
16 E. Calibration/functionality test, inspection, and routine maintenance schedules and
17 checklists, including justification for calibration, inspection and maintenance frequencies,
18 criteria for identifying instruments found to be significantly out of calibration, and
19 corrective action to be taken for instruments found to be significantly out of calibration
20 (e.g., increasing frequency of calibration, instrument replacement, etc.); and,
21 F. Equipment instrument control logic narrative description (e.g., software functional
22 specifications, descriptions of failsafe conditions, etc.) [[WAC 173-303-680\(2\)](#), [WAC](#)
23 [173-303-806\(4\)\(i\)\(i\)\(B\)](#), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)]; and,
- 24 **III.10.H.5.f.xvii** **Outline of demonstration test report.**
25

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
<p><u>LAW Melter Process System</u></p> <p>LMP-MLTR-00001 (LAW Melter 1)</p> <p>LMP-MLTR-00002 (LAW Melter 2)</p>	LMP	<p><u>24590-LAW</u></p> <p>-P1-P01T-00002, Rev 5</p> <p>-P1-P01T-00007, Rev 8</p> <p>-P1-P01T-00009, Rev 8</p>	Section 4.1.3.2, Table C-8, and Figures C1-1, C1-3 and C1-21 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>LAW Primary Offgas Process System</u></p> <p>LOP-FCLR-00001 (Melter 1 Primary Film Cooler)</p> <p>LOP-FCLR-00002 (Melter 1 Standby Film Cooler No. 2)</p> <p>LOP-FCLR-00003 (Melter 2 Primary Film Cooler)</p> <p>LOP-FCLR-00004 (Melter 2 Standby Film Cooler)</p>	LOP	<p><u>24590-LAW</u></p> <p>-P1-P01T-00002, Rev 5</p> <p>-P1-P01T-00007, Rev 8</p> <p>-P1-P01T-00009, Rev 8</p> <p>-M6-LOP-P0001, Rev 2</p> <p>-M6-LOP-P0002, Rev 2</p>	Section 4.1.3.3, Table C-8, and Figures C1-1, C1-3 and C1-21 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>LAW Primary Offgas Process System (Cont.)</u></p> <p>LOP-SCB-00001 (Melter 1 Submerged Bed Scrubber)</p> <p>LOP-SCB-00002 (Melter 2 Submerged Bed Scrubber)</p>	LOP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0007, Rev 0</p> <p>-M5-V17T-P0008, Rev 0</p> <p>-M6-LOP-P0001, Rev 2</p> <p>-M6-LOP-P0002, Rev 2</p> <p>-MK-LOP-P0001001, Rev 0</p> <p>-MK-LOP-P0001002, Rev 0</p> <p>-MK-LOP-P0001003, Rev 0</p> <p>-MKD-LOP-P0008, Rev 0</p> <p>-NID-LOP-P0001, Rev 1</p> <p>-P1-P01T-00002, Rev 5</p> <p>-P1-P01T-00007, Rev 8</p>	Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
		-P1-P01T-00010, Rev 8	
<p><u>LAW Primary Offgas Process System (Cont.)</u></p> <p>LOP-WESP-00001 (Melter 1 Wet Electrostatic Precipitator - WESP)</p> <p>LOP-WESP-00002 (Melter 2 Wet Electrostatic Precipitator -WESP)</p>	LOP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0007, Rev 0 -M5-V17T-P0008, Rev 0 -M6-LOP-P0001, Rev 2 -M6-LOP-P0002, Rev 2 -NID-LOP-00003, Rev 3 -P1-P01T-00002, Rev 5 -P1-P01T-00007, Rev 8 -P1-P01T-00011, Rev 6</p> <p><u>24590-WTP</u></p> <p>-3PS-MKE0-T0001, Rev 5</p>	Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>LAW Secondary Offgas/Vessel Vent Process System</u></p> <p>LVP-HEPA-00001A (Melter Offgas HEPA Filter)</p> <p>LVP-HEPA-00001B (Melter Offgas HEPA Filter)</p> <p>LVP-HEPA-00002A (Melter Offgas HEPA Filter)</p> <p>LVP-HEPA-00002B (Melter Offgas HEPA Filter)</p> <p>LVP-HEPA-00003A (Melter Offgas HEPA Filter)</p>	LVP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0010, Rev 2 -M6-LVP-P0003, Rev 1</p>	Section 4.1.3.3, Table C-8, Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.
<u>LAW Secondary Offgas/Vessel Vent Process</u>	LVP	RESERVED	Section 4.1.3.3, Table C-8, Figures C1-

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
<p><u>System (Cont.)</u></p> <p>LVP-SCO-00001 (Thermal Catalytic Oxidizer – located on LVP-SKID-00002)</p>			<p>1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p> <p>LVP-SCR-00001 (NO_x Selective Catalytic Reduction Unit – located on LVP-SKID-00002)</p>	LVP	RESERVED	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p> <p>LVP-ADBR-00001A (Offgas Mercury Adsorber – located on LVP-SKID-00001)</p> <p>LVP-ADBR-00001B (Offgas Mercury Adsorber – located on LVP-SKID-00001)</p>	LVP	RESERVED	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p> <p>LVP-SCB-00001 (Melter Offgas Caustic Scrubber)</p>	LVP	<p><u>24590-LAW</u> -P1-P01T-00004, Rev 3 -P1-P01T-00009, Rev 8 -M6-LVP-P0002, Rev 3</p>	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p>	LVP	<p><u>24590-LAW</u> -M5-V17T-P0010, Rev 2</p>	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit</p>

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
<p>LVP-HTR-00001A (Melter Offgas HEPA Preheater)</p> <p>LVP-HTR-00001B (Melter Offgas HEPA Preheater)</p> <p>LVP-HTR-00002 (Catalytic Oxidizer Electric Heater – located on LVP-SKID-00002)</p>		<p>-M6-LVP-P0001, Rev 1</p> <p>-M6-LVP-P0005, Rev 1</p>	<p>Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p> <p>LVP-HX-00001 (Catalytic Oxidizer Heat Recovery Unit – located on LVP-SKID-00002)</p>	LVP	RESERVED	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>
<p><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></p> <p>LVP-EXHR-00001A (Melter Offgas Exhauster)</p> <p>LVP-EXHR-00001B (Melter Offgas Exhauster)</p> <p>LVP-EXHR-00001C (Melter Offgas Exhauster)</p>	LVP	<p><u>24590-LAW</u></p> <p>-M5-V17T-P0010, Rev 2</p> <p>-M6-LVP-P0001, Rev 1</p>	<p>Section 4.1.3.3, Table C-8, and Figures C1-1 and C1-3 in Operating Unit Group 10, Addendum C of this Permit.</p>

Table III.10.H.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^a (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

Table III.10.H.C - LAW Vitrification System 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
24590-LAW-M6-LMP-00005001	Melter 1 Plenum Temperature Average	Temperature Element	TE-1267C, 1272C, 1280C	TBD	TBD	TBD	TBD	TBD
		Temperature Transmitter	TT-1267B					
		Temperature Indicator	TI-1267C, 1272C, 1280C					
24590-LAW-M6-LMP-00035001	Melter 2 Plenum Temperature Average	Temperature Element	TE-2267C, 2272C, 2280C	TBD	TBD	TBD	TBD	TBD
		Temperature Transmitter	TT-2267B					

Table III.10.H.C - LAW Vitrification System 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
		Temperature Indicator	TI-2267C, 2272C, 2280C					
24590-LAW-M6-LMP-00002002	Melter 1 Glass Pool Density	Density Transmitter	DT-1404	TBD	TBD	TBD	TBD	TBD
		Density Indicator	DI-1404					
24590-LAW-M6-LMP-00032002	Melter 2 Glass Pool Density	Density Transmitter	DT-2404	TBD	TBD	TBD	TBD	TBD
		Density Indicator	DI-2404					
24590-LAW-M6-LMP-00002002	Melter 1 Glass Pool Level	Level Transmitter	LT-1405	TBD	TBD	TBD	TBD	TBD
		Level Indicator	LI-1405					
24590-LAW-M6-LMP-00032002	Melter 2 Glass Pool Level	Level Transmitter	LT-2405	TBD	TBD	TBD	TBD	TBD
		Level Indicator	LI-2405					
24590-LAW-M6-LMP-00002002	Melter 1 Plenum Pressure	Pressure Differential Transmitter	PDT-1410 / PDI-1410* or	TBD	TBD	TBD	TBD	TBD

Table III.10.H.C - LAW Vitrification System 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
		Pressure Differential Indicator	PDT-1411 / PDI-1411*					
24590-LAW-M6-LMP-00032002	Melter 2 Plenum Pressure	Pressure Differential Transmitter	PDT-2410 / PDI-2410* or	TBD	TBD	TBD	TBD	TBD
		Pressure Differential Indicator	PDT-2411 / PDI-2411*					
24590-LAW-M6-LMP-00007002	Melter 1 West Canister Level	Level Element (IR Camera)	LE-1466	TBD	TBD	TBD	TBD	TBD
		Level Transmitter	LT-1466					
		Level Indication	LI-1466B					
24590-LAW-M6-LMP-00007001	Melter 1 East Canister Level	Level Element (IR Camera)	LE-1511	TBD	TBD	TBD	TBD	TBD
		Level Transmitter	LT-1511					
		Level Indication	LI-1511B					
24590-LAW-M6-LMP-	Melter 2 West Canister Level	Level Element (IR Camera)	LE-2466	TBD	TBD	TBD	TBD	TBD

Table III.10.H.C - LAW Vitrification System 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
00037002		Level Transmitter	LT-2466					
		Level Indication	LI-2466B					
24590-LAW-M6-LMP-00037001	Melter 2 East Canister Level	Level Element (IR Camera)	LE-2511	TBD	TBD	TBD	TBD	TBD
		Level Transmitter	LT-2511					
		Level Indication	LI-2511B					
24590-LAW-M6-LMP-00010001	Melter 1 West Discharge Air Lift	On/Off Plug Valve	YV-1125	TBD	TBD	TBD	TBD	TBD
		Valve Control	YC-1125					
24590-LAW-M6-LMP-00008001	Melter 1 East Discharge Air Lift	On/Off Plug Valve	YV-1047	TBD	TBD	TBD	TBD	TBD
		Valve Control	YC-1047					
24590-LAW-M6-LMP-00040001	Melter 2 West Discharge Air Lift	On/Off Plug Valve	YV-2125	TBD	TBD	TBD	TBD	TBD
		Valve Control	YC-2125					

Table III.10.H.C - LAW Vitrification System 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
24590-LAW-M6-LMP-00038001	Melter 2 East Discharge Air Lift	On/Off Plug Valve	YV-2047	TBD	TBD	TBD	TBD	TBD
		Valve Control	YC-2047					
24590-LAW-M6-LMP-00012001	Melter 1 Feed Encasement Assembly Leak Detection	Cable Type Conductivity Element	LE-1632	TBD	TBD	TBD	TBD	TBD
			LA-1632					
24590-LAW-M6-LMP-00042001	Melter 2 Feed Encasement Assembly Leak Detection	Cable Type Conductivity Element	LE-2632	TBD	TBD	TBD	TBD	TBD
			LAH-2632					
24590-LAW-M6-LMP-00013002 and 24590-LAW-M6-LMP-00005	Melter 1 Lid Cooling	Temperature Element	TE-1640	TBD	TBD	TBD	TBD	TBD
		Temperature Transmitter	TT-1293					

Table III.10.H.C - LAW Vitrification System 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
		Temperature Indicator	TI-1640					
24590-LAW-M6-LMP-00043 and 24590-LAW-M6-LMP-00035001	Melter 2 Lid Cooling	Temperature Element	TE-2640	TBD	TBD	TBD	TBD	TBD
		Temperature Transmitter	TT-2293					
		Temperature Indicator	TI-2640					
* These instrument sets are duplicates. Only one instrument set is required to remain functioning during waste feed operations.								

Table III.10.H.D - Maximum Feedrates to LAW Vitrification System (RESERVED)

Description of Waste	Shakedown 1 and Post Demonstration Test	Shakedown 2 and Demonstration Test
Dangerous and Mixed Waste Feedrate	RESERVED	RESERVED
Total Chlorine/Chloride Feedrate	RESERVED	RESERVED
Total Metal Feed-rates	RESERVED	RESERVED
Total Ash Feed-rate	RESERVED	RESERVED

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Table III.10.H.E - LAW Vitrification System Estimated Emission Rates (RESERVED)

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

1

**TABLE III.10.H.F - LAW Vitrification System Waste Feed Cutoff Parameters^{1 2}
(RESERVED)**

Sub-system Designation	Instrument Tag Number	Parameter Description	Setpoints During Shakedown 1 and Post Demonstration Test	Setpoints During Shakedown 2 and Demonstration Test
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

¹ A continuous monitoring system will be used as defined in Permit Section [III.10.C.1](#).

² Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., ash, metals, and chlorine/chloride) feed limits specified on Table [III.10.H.D.](#) of this Permit.

1 **III.10.I LAW VITRIFICATION SYSTEM – LONG TERM MISCELLANEOUS THERMAL**
2 **TREATMENT UNIT**

3 For purposes of Permit Section [III.10.I](#), where reference is made to [WAC 173-303-640](#), the
4 following substitutions apply: substitute the terms “LAW Vitrification System” for “tank
5 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and
6 “sub-system(s) or sub-system equipment of a LAW Vitrification System” for “component(s),” in
7 accordance with [WAC 173-303-680](#).

8 **III.10.I.1 Requirements For LAW Vitrification System Beginning Normal Operation**

9 Prior to commencing normal operations provided in Permit Section [III.10.I](#), all requirements in
10 Permit Section [III.10.H](#) will have been met by the Permittees and approved by Ecology, including
11 the following: The LAW Vitrification System Demonstration Test results and the revised Final Risk
12 Assessment provided for in Permit Condition III.10.C.11.c or III.10.C.11.d and Permit Section
13 [III.10.H](#), will have been evaluated and approved by Ecology, Permit Tables III.10.I.D and F, as
14 approved/modified pursuant to Permit Condition III.10.H.5, will have been completed, submitted
15 and approved pursuant to Permit Condition III.10.H.3.d.v and Permit Table [III.10.I.E](#), as
16 approved/modified pursuant to Permit Condition III.10.H.5, will have been completed, submitted
17 and approved pursuant to Permit Condition III.10.C.11.c or d.

18 **III.10.I.1.a Construction and Maintenance [[WAC 173-303-640](#), in accordance with [WAC 173-303-](#)**
19 **[680\(2\)](#) and (3) and [WAC 173-303-340](#)]**

20 **III.10.I.1.a.i** The Permittees will maintain the design and construction of the LAW Vitrification System
21 as specified in Permit Condition III.10.I.1, Operating Unit Group 10, Addendum C of this
22 Permit, and Operating Unit Group 10, Appendices 9.1 through 9.17 of this Permit, as
23 approved pursuant to Permit Conditions III.10.H.5.a through d and III.10.H.5.f.

24 **III.10.I.1.a.ii** The Permittees will maintain the design and construction of all containment systems for the
25 LAW Vitrification System, as specified in Operating Unit Group 10, Addendum C of this
26 Permit, and Operating Unit Group 10, Appendices 9.2 and 9.4 through 9.14 of this Permit, as
27 approved pursuant to Permit Conditions III.10.H.5.a through d.

28 **III.10.I.1.a.iii** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of
29 this Permit for the LAW Vitrification System will be allowed only in accordance with
30 Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g, III.10.C.9.d, e., and h.

31 **III.10.I.1.a.iv** The Permittees will ensure all certifications required by specialists (e.g., IQRPE; registered
32 professional engineer; independent corrosion expert; independent, qualified installation
33 inspector; installation inspector; etc.) use the following statement or equivalent pursuant to
34 Permit Condition III.10.C.10:

35 “I, (Insert Name), have (choose one or more of the following: overseen, supervised,
36 reviewed, and/or certified) a portion of the design or installation of a new LAW Vitrification
37 system or component located at (address), and owned/operated by (name(s)). My duties
38 were: (e.g., installation inspector, testing for tightness, etc.), for the following LAW
39 Vitrification System components (e.g., the venting piping, etc.), as required by the
40 Dangerous Waste Regulations, namely, [WAC 173-303-640](#)(3) (applicable paragraphs [i.e.,
41 (a) through (g)], in accordance with [WAC 173-303-680](#)).

1 “I certify under penalty of law that I have personally examined and am familiar with the
2 information submitted in this document and all attachments and that, based on my inquiry of
3 those individuals immediately responsible for obtaining the information, I believe that the
4 information is true, accurate, and complete. I am aware that there are significant penalties
5 for submitting false information, including the possibility of fine and imprisonment.”

6 **III.10.I.1.a.v** The Permittees will ensure periodic integrity assessments are conducted on the LAW
7 Vitrification System listed in Permit Table [III.10.I.A](#), as approved/modified pursuant to
8 Permit Condition III.10.H.5, over the term of this Permit in accordance with [WAC 173-303-](#)
9 [680](#)(2) and (3) as specified in [WAC 173-303-640](#)(3)(b), following the description of the
10 integrity assessment program and schedule in Operating Unit Group 10, Addendum E of this
11 Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i and III.10.C.5.c. Results of
12 the integrity assessments will be included in the WTP Unit operating record until ten (10)
13 years after post closure, or corrective action is complete and certified, whichever is later.

14 **III.10.I.1.a.vi** The Permittees will address problems detected during the LAW Vitrification System
15 integrity assessments specified in Permit Condition III.10.I.1.a.v following the description of
16 the integrity assessment program in Operating Unit Group 10, Addendum E of this Permit,
17 as approved pursuant to Permit Conditions III.10.H.5.e.i and III.10.C.5.c.

18 **III.10.I.1.a.vii** All process monitors/instruments as specified in Permit Table [III.10.I.F](#), as
19 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, will be
20 equipped with operational alarms to warn of deviation, or imminent deviation from the limits
21 specified in Permit Table [III.10.I.F](#).

22 **III.10.I.1.a.viii** The Permittees will install and test all process and leak detection system
23 monitors/instruments, as specified in Permit Tables [III.10.I.C](#) and [III.10.I.F](#), as
24 approved/modified pursuant to Permit Condition III.10.H.5 and III.10.H.3.d.v, in accordance
25 with Operating Unit Group 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved
26 pursuant to Permit Conditions III.10.H.5.d.x and III.10.H.5.f.xvi.

27 **III.10.I.1.a.ix** No dangerous and/or mixed waste will be treated in the LAW Vitrification System unless the
28 operating conditions, specified under Permit Condition III.10.I.1.c are complied with.

29 **III.10.I.1.a.x** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
30 materials in the LAW Vitrification System if these substances could cause the sub-system,
31 sub-system equipment, or the containment system to rupture, leak, corrode, or otherwise fail
32 [[WAC 173-303-640](#)(5)(a), in accordance with [WAC 173-303-680](#)(2)]. This condition is not
33 applicable to corrosion of LAW Vitrification System sub-system or sub-system equipment
34 that are expected to be replaced as part of normal operations (e.g., melters).

35 **III.10.I.1.a.xi** The Permittees will operate the LAW Vitrification System to prevent spills and overflows
36 using description of controls and practices as required under [WAC 173-303-640](#)(5)(b),
37 described in Permit Condition [III.10.C.5](#) and Operating Unit Group 10, Appendix 9.18 of
38 this Permit, as approved pursuant to Permit Condition III.10.H.5.e [[WAC 173-303-](#)
39 [640](#)(5)(b), in accordance with [WAC 173-303-680](#)(2) and (3), and [WAC 173-303-](#)
40 [806](#)(4)(c)(ix)].

41 **III.10.I.1.a.xii** For routinely non-accessible LAW Vitrification System sub-systems, as specified in
42 Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit
43 Condition III.10.H.5.e.vi, the Permittees will mark all routinely non-accessible LAW

Vitrification System sub-systems access points with labels or signs to identify the waste contained in each LAW Vitrification System sub-system. The label, or sign, 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 LAW Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-accessible” means personnel are unable to enter these areas while waste is being managed in them [[WAC 173-303-640\(5\)\(d\)](#), in accordance with [WAC 173-303-680\(2\)](#)].

III.10.I.1.a.xiii

For the LAW Vitrification System sub-systems not addressed in Permit Condition III.10.I.1.a.xii, the Permittees will mark these LAW Vitrification System sub-systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the LAW Vitrification System 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 LAW Vitrification System sub-systems [[WAC 173-303-640\(5\)\(d\)](#), in accordance with [WAC 173-303-680\(2\)](#)].

III.10.I.1.a.xiv

The Permittees will ensure that the secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as approved/modified pursuant to Permit Condition III.10.H.5, 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 LAW Vitrification System sub-systems. Any indication that a crack or gap may exist in the containment systems will be investigated and repaired in accordance with Operating Unit Group 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v [[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](#)].

III.10.I.1.a.xv

The Permittees must immediately, and safely, remove from service any LAW Vitrification 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 III.10.I.1.a.xvii A through D, and F. The affected LAW Vitrification System or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.I.1.a.xvii.E [[WAC 173-303-640\(7\)\(e\)](#) and (f) and [WAC 173-303-640\(8\)](#), in accordance with [WAC 173-303-680\(3\)](#)].

III.10.I.1.a.xvi

An impermeable coating, as specified in Operating Unit Group 10, Appendices 9.4, 9.5, 9.7, 9.9, 9.11, and 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v, will be maintained for all concrete containment systems and concrete portions of containment systems for the LAW Vitrification System sub-systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as approved/modified pursuant to Permit Condition III.10.H.5 (concrete containment systems that do not have a liner, pursuant to [WAC 173-303-640\(4\)\(e\)\(i\)](#), in accordance with [WAC 173-303-680\(2\)](#), and have construction joints, will meet the requirements of [WAC 173-303-640\(4\)\(e\)\(ii\)\(C\)](#), in accordance with [WAC 173-303-680\(2\)](#). The coating will prevent migration of any dangerous and/or mixed waste into the concrete. All coatings will meet the following performance standards:

- 1 A. The coating must seal the containment surface such that no cracks, seams, or other
2 avenues through which liquid could migrate are present;
- 3 B. The coating must be of adequate thickness and strength to withstand the normal operation
4 of equipment and personnel within the given area such that degradation or physical
5 damage to the coating or lining can be identified and remedied before dangerous and
6 mixed waste could migrate from the system; and
- 7 C. The coating must be compatible with the dangerous and/or mixed waste, treatment
8 reagents, or other materials managed in the containment system [[WAC 173-303-](#)
9 [640\(4\)\(e\)\(ii\)\(D\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and (3) and [WAC 173-303-](#)
10 [806\(4\)\(i\)\(i\)\(A\)](#)].

11 **III.10.I.1.a.xvii**

12 The Permittees inspect all secondary containment systems for the LAW Vitrification System
13 sub-systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as approved/modified pursuant
14 to Permit Condition III.10.H.5, in accordance with the Inspection Schedule specified in
15 Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit
16 Conditions III.10.H.5.e.i and III.10.C.5.c, and take the following actions if a leak or spill of
17 dangerous and/or mixed waste is detected in these containment systems [[WAC 173-303-](#)
18 [640\(5\)\(c\)](#) and [WAC 173-303-640\(6\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and (3),
[WAC 173-303-320](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)]:

- 19 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW
20 Vitrification System sub-systems or secondary containment system;
- 21 B. Determine the source of the dangerous and/or mixed waste;
- 22 C. Remove the waste from the containment area in accordance with [WAC 173-303-680\(2\)](#)
23 and (3) as specified in [WAC 173-303-640\(7\)\(b\)](#). The waste removed from containment
24 areas of the LAW Vitrification System sub-systems will be, as a minimum, managed as
25 dangerous and/or mixed waste;
- 26 D. If the cause of the release was a spill that has not damaged the integrity of the LAW
27 Vitrification System sub-system, the Permittees may return the LAW Vitrification
28 System sub-system to service in accordance with [WAC 173-303-680\(2\)](#) and (3) as
29 specified in [WAC 173-303-640\(7\)\(e\)\(ii\)](#). In such case, the Permittees will take action to
30 ensure the incident that caused the dangerous and/or mixed waste to enter the
31 containment system will not reoccur;
- 32 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the
33 primary LAW Vitrification System into the secondary containment system, or the system
34 is unfit for use as determined through an integrity assessment or other inspection, the
35 Permittees will comply with the requirements of [WAC 173-303-640\(7\)](#) and take the
36 following actions:
 - 37 1. Close the LAW Vitrification System sub-system following procedures in [WAC 173-](#)
38 [303-640\(7\)\(e\)\(i\)](#), in accordance with [WAC 173-303-680](#) and Operating Unit Group 10,
39 Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8; or,
 - 40 2. Repair and re-certify (in accordance with [WAC 173-303-810\(13\)\(a\)](#), as modified
41 pursuant to Permit Condition III.10.I.1.a.iii) the LAW Vitrification System in
42 accordance with Operating Unit Group 10, Appendix 9.18 of this Permit, as approved
43 pursuant to Permit Condition III.10.H.5.e.v, before the LAW Vitrification System is
44 placed back into service [[WAC 173-303-640\(7\)\(e\)\(iii\)](#) and [WAC 173-303-640\(7\)\(f\)](#)], in
45 accordance with [WAC 173-303-680](#)].

1 F. The Permittees will document in the WTP Unit operating record actions/procedures taken
2 to comply with A through E above, as specified in [WAC 173-303-640\(6\)\(d\)](#), in
3 accordance with [WAC 173-303-680\(2\)](#) and (3); and,

4 G. In accordance with [WAC 173-303-680\(2\)](#) and (3), the Permittees will notify and report
5 releases to the environment to Ecology, as specified in [WAC 173-303-640\(7\)\(d\)](#).

6 **III.10.I.1.a.xviii**

7 If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water,
8 liquids from damaged or broken pipes) cannot be removed from the secondary containment
9 system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four
10 (24) hours of discovery. The notification will provide the information in A, B, and C, listed
11 below. The Permittees will provide Ecology with a written demonstration within seven (7)
12 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\(4\)\(i\)\(B\)](#):

13 A. Reasons for delayed removal;

14 B. Measures implemented to ensure continued protection of human health and the
15 environment; and,

16 C. Current actions being taken to remove liquids from secondary containment.

17 **III.10.I.1.a.xix**

18 All air pollution control devices and capture systems in the LAW Vitrification System will
19 be maintained and operated at all times in a manner so as to minimize the emissions of air
20 contaminants and to minimize process upsets. Procedures for ensuring that the air pollution
21 control devices and capture systems in the LAW Vitrification System are properly operated
22 and maintained so as to minimize the emission of air contaminants and process upsets will
be established.

23 **III.10.I.1.a.xx**

24 In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-
system names with the sub-system designation.

25 **III.10.I.1.a.xxi**

26 For any portion of the LAW Vitrification System that has the potential for formation and
27 accumulation of hydrogen gases, the Permittees will operate the portion to maintain
hydrogen levels below the LEL [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)].

28 **III.10.I.1.a.xxii**

29 For each LAW Vitrification System sub-system holding dangerous and/or mixed waste that
30 are acutely or chronically toxic by inhalation, the Permittees will operate the system to
31 prevent escape of vapors, fumes, or other emissions into the air [[WAC 173-303-
806\(4\)\(i\)\(B\)](#) and [WAC 173-303-640\(5\)\(e\)](#)], in accordance with [WAC 173-303-680](#)].

32 **III.10.I.1.a.xxiii**

33 The existing LAW building will retain capability to install the third melter before or after hot
34 start-up. No permanent systems, structures, or components shall be installed in the melter
35 cell, pour cave or wet process cell for the third melter that would preclude future installation
of the third melter.

36 **III.10.I.1.b Performance Standards**

37 **III.10.I.1.b.i**

38 The LAW Vitrification System must achieve a DRE of 99.99% for the PODCs listed below
39 [[40 CFR §63.1203\(c\)\(1\)](#) and [40CFR §63.1203\(c\)\(2\)](#)], in accordance with [WAC 173-303-
680\(2\)](#)]:

40 RESERVED

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

42
$$DRE=[1-(W_{out}/W_{in})] \times 100\%$$

Where:

W_{in} =mass feed rate of one PODC in a waste feed stream; and,

W_{out} =mass emission rate of the same PODC present in exhaust emissions prior to release to the atmosphere.

- III.10.I.1.b.ii** Particulate matter emissions from the LAW Vitrification System will not exceed 34 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.iii** Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System will not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.iv** Dioxin and Furan TEQ emissions from the LAW Vitrification System will not exceed 0.2 nanograms (ng)/dscm, [40 CFR §63.1203(b)(1), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.v** Mercury emissions from the LAW Vitrification System will not exceed 45 µg/dscm [40 CFR §63.1203(b)(2), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.vi** Lead and cadmium emissions from the LAW Vitrification System will not exceed 120 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.vii** Arsenic, beryllium, and chromium emissions from the LAW Vitrification System will not exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with [WAC 173-303-680\(2\)](#)];
- III.10.I.1.b.viii** Carbon monoxide (CO) emission from the LAW Vitrification System will not exceed 100 ppmv, 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\(2\)](#) and (3)];
- III.10.I.1.b.ix** Hydrocarbon emission from the LAW Vitrification System will not exceed 10 ppmv by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system during demonstration testing required by this Permit), dry basis and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with [WAC 173-303-680\(2\)](#) and (3)];
- III.10.I.1.b.x** If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table [III.10.I.E](#), as approved pursuant to Permit Condition III.10.C.11.c or d, the Permittees will perform the following actions [[WAC 173-303-680\(2\)](#) and (3), and [WAC 173-303-815\(2\)\(b\)\(ii\)](#)]:
- A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s) as specified in Permit Condition I.E.21.
 - B. Submit to Ecology additional risk information to indicate that the increased emissions impact is offset by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of exceeding the emission rate(s); and
 - C. Based on the notification and any additional information, Ecology may provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a

1 permit modification pursuant to Permit Conditions [III.10.C.2.e](#) through g. The revised
2 Demonstration Test Plan must include substantive changes to prevent failure from
3 reoccurring;

4 The emission limits specified in Permit Conditions III.10.I.1.b.i through x. above, will be
5 met for the LAW Vitrification System by limiting feed rates as specified in Permit Tables
6 [III.10.I.D](#) and [III.10.I.F](#), as approved/modified pursuant to Permit Conditions III.10.H.5 and
7 III.10.H.3.d.v, compliance with operating conditions specified in Permit Condition
8 [III.10.I.1.c](#) (except as specified in Permit Condition III.10.I.1.b.xii), and compliance with
9 Permit Condition III.10.I.1.b.xi;

10 **III.10.I.1.b.xi**

Treatment effectiveness, feedrates and operating rates for dangerous and/or mixed waste
11 management units contained in the LAW Building, but not included in Permit Table
12 [III.10.I.A](#), as approved/modified pursuant to Permit Condition III.10.H.5, will be as specified
13 in Permit Sections III.10.D through F and consistent with assumptions and basis which are
14 reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved pursuant to
15 Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit
16 Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant
17 to either Permit Condition III.10.C.11.c or III.10.C.11.d [[WAC 173-303-680](#)(2) and (3), and
18 [WAC 173-303-815](#)(2)(b)(ii)]; and,

19 **III.10.I.1.b.xii**

Except during periods of LAW Vitrification System startup and shutdown, compliance with
20 the operating conditions specified in Permit Condition III.10.I.1.c, will be regarded as
21 compliance with the required performance standards identified in Permit Conditions
22 III.10.I.1.b.i through x. However, if it is determined that during the effective period of this
23 Permit that compliance with the operating conditions in Permit Condition III.10.I.1.c is not
24 sufficient to ensure compliance with the performance standards specified in Permit
25 Conditions III.10.I.1.b.i through x., the Permit may be modified, revoked, or reissued
26 pursuant to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g.

27 **III.10.I.1.c Operating Conditions [[WAC-303-670](#)(6), in accordance with [WAC 173-303-680](#)(2) and**
28 **(3)]**

29 The Permittees will operate the LAW Vitrification System in accordance with Operating Unit Group
30 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi and
31 Operating Unit Group 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition
32 III.10.H.5.e, and Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to
33 Permit Condition III.10.H.5.f, except as modified pursuant to Permit Conditions III.10.H.3,
34 III.10.I.1.b.x, III.10.I.1.b.xii, III.10.I.1.h, and in accordance with and the following:

35 **III.10.I.1.c.i**

The Permittees will operate the LAW Vitrification System in order to maintain the systems
36 and process parameters listed in Permit Tables III.10.I.C and III.10.I.F, as
37 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, within the
38 set-points specified in Permit Table [III.10.I.F](#).

39 **III.10.I.1.c.ii**

The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F](#), as
40 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, to
41 automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW
42 Vitrification System when the monitored operating conditions deviate from the set-points
43 specified in Permit Table [III.10.I.F](#).

- 1 **III.10.I.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F](#), as
2 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, to
3 automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW
4 Vitrification System when all instruments specified in Permit Table [III.10.H.F](#) for measuring
5 the monitored parameters fails or exceeds its span value.
- 6 **III.10.I.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F](#), as
7 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, to
8 automatically cut-off and/or lock out the dangerous waste and/or mixed waste feed to the
9 LAW Vitrification System when any portion of the LAW Vitrification System is bypassed.
10 The terms “bypassed” and “bypass event,” as used in Permit Sections [III.10.H](#) and [III.10.I](#),
11 will mean if any portion of the LAW Vitrification System is bypassed so that gases are not
12 treated as during the Demonstration Test.
- 13 **III.10.I.1.c.v** In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.I.F](#), as
14 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, the
15 Permittees will immediately, manually cutoff the dangerous and/or mixed waste feed to the
16 LAW Vitrification System. The Permittees will not restart the dangerous and/or mixed
17 waste feed until the problem causing the malfunction has been identified and corrected.
- 18 **III.10.I.1.c.vi** The Permittees will manually cutoff the dangerous and/or mixed waste feed to the LAW
19 Vitrification System when the operating conditions deviate from the limits specified in
20 Permit Condition III.10.I.1.c.i, unless the deviation automatically activates the waste feed
21 cut-off sequence specified in Permit Conditions III.10.I.1.c.ii, iii, and/or iv.
- 22 **III.10.I.1.c.vii** If greater than thirty (30) dangerous and/or mixed waste feed cutoff, combined, to the LAW
23 Vitrification System occur due to deviations from Permit Table [III.10.I.F](#), as
24 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, within a
25 sixty (60) day period, the Permittees will submit a written report to Ecology within five (5)
26 calendar days of the thirty-first exceedence, including the information specified below.
27 These dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether
28 automatically or manually activated, are counted if the specified set-points are deviated from
29 while dangerous and/or mixed waste and waste residues continue to be processed in the
30 LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the
31 first waste feed cut-off parameter, specified in Permit Table [III.10.I.F](#), from which the set-
32 point is deviated:
- 33 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.I.F](#);
 - 34 B. The magnitude, dates, and duration of the deviations;
 - 35 C. Results of the investigation of the cause of the deviations; and,
 - 36 D. Corrective measures taken to minimize future occurrences of the deviations.
- 37 **III.10.I.1.c.viii** If greater than thirty (30) dangerous and/or mixed waste feed cutoff, combined, to the LAW
38 Vitrification System occur due to deviations from Permit Table [III.10.I.F](#), as
39 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v, within a
40 thirty (30) day period, the Permittees will submit the written report required to be submitted
41 pursuant to Permit Condition III.10.I.1.c.vii to Ecology on the first business day following
42 the thirty-first exceedence. These dangerous and/or mixed waste feed cut-offs to the LAW
43 Vitrification System, whether automatically or manually activated, are counted if the
44 specified set-points are deviated from while dangerous and/or mixed waste and waste

1 residues continue to be processed in the LAW Vitrification System. A cascade event is
2 counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on
3 Permit Table [III.10.I.F](#), from which the set-point is deviated.

4 In accordance with [WAC 173-303-680](#)(2) and (3), the Permittees may not resume dangerous
5 and/or mixed waste feed to the LAW Vitrification System until this written report has been
6 submitted, and

7 A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed
8 waste feed; or,

9 B. Ecology has not, within seven (7) days, notified the Permittees in writing of the
10 following:

11 1. The Permittees written report does not document that the corrective measures taken will
12 minimize future exceedances; and,

13 2. The Permittees must take further corrective measures and document that these further
14 corrective measures will minimize future exceedances.

15 **III.10.I.1.c.ix**

If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or
16 mixed waste, it will be regarded as non-compliance with the operating conditions specified
17 in Permit Condition III.10.I.1.c and the performance standards specified in Permit Condition
18 III.10.I.1.b. After such a bypass event, the Permittees will perform the following actions:

19 A. Investigate the cause of the bypass event;

20 B. Take appropriate corrective measures to minimize future bypasses;

21 C. Record the investigation findings and corrective measures in the WTP Unit operating
22 record; and,

23 D. Submit a written report to Ecology within five (5) days of the bypass event documenting
24 the result of the investigation and corrective measures.

25 **III.10.I.1.c.x**

The Permittees will control fugitive emissions from the LAW Vitrification System by
26 maintaining the melters under negative pressure.

27 **III.10.I.1.c.xi**

28 Except during periods of vitrification system startup and shutdown, compliance with the
29 operating conditions specified in Permit Condition III.10.I.1.c will be regarded as
30 compliance with the required performance standards identified in Permit Condition
31 III.10.I.1.b. However, evidence that compliance with these operating conditions is
32 insufficient to ensure compliance with the performance standards, will justify modification,
33 revocation, or re-issuance of this Permit, in accordance with Permit Conditions [III.10.C.2.e](#)
and f, or III.10.C.2.g.

34 **III.10.I.1.d Inspection Requirements [\[WAC 173-303-680\(3\)\]](#)**

35 **III.10.I.1.d.i**

The Permittees will inspect the LAW Vitrification System in accordance with the Inspection
36 Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in
37 accordance with Permit Condition III.10.C.5.c.

38 **III.10.I.1.d.ii**

39 The inspection data for LAW Vitrification System will be recorded, and the records will be
40 placed in the WTP Unit operating record for LAW Vitrification System, in accordance with
Permit Condition III.10.C.4.

41 **III.10.I.1.d.iii**

42 The Permittees will comply with the inspection requirements specified in Operating Unit
Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition
Part III, Operating Unit Conditions 10.201

1 III.10.H.5.f and as modified by Permit Conditions III.10.H.3, III.10.I.1.b.x, III.10.I.1.b.xii,
2 and III.10.I.1.h.

3 **III.10.I.1.e Monitoring Requirements [WAC 173-303-670(5), [WAC 173-303-670\(6\)](#), [WAC 173-303-](#)**
4 **[670\(7\)](#), and WAC 173-303-807(2), in accordance with [WAC 173-303-680\(3\)](#)]**

5 **III.10.I.1.e.i** Upon receipt of a written request from Ecology, the Permittees will perform sampling and
6 analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the
7 operating requirements established in the Permit achieve the performance standards
8 delineated in this Permit.

9 **III.10.I.1.e.ii** The Permittees will comply with the monitoring requirements specified in the Operating
10 Unit Group 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved
11 pursuant to Permit Condition III.10.H.5, and as modified by Permit Conditions III.10.H.3,
12 III.10.I.1.h, III.10.I.1.b.x, and III.10.I.1.b.xii.

13 **III.10.I.1.e.iii** The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon
14 CEM specified in this Permit in accordance with Performance Specifications 4B and 8A of
15 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part
16 63, and Operating Unit Group 10 Appendix 9.15 of this Permit, as approved pursuant to
17 Permit Condition III.10.H.5.f, and as modified by Permit Conditions III.10.H.3, III.10.I.1.h,
18 III.10.I.1.b.x, and III.10.I.1.b.xii.

19 **III.10.I.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified in Permit
20 Tables [III.10.I.C](#) and [F](#), as approved/modified pursuant to Permit Conditions III.10.H.5 and
21 III.10.H.3.d.v., in accordance with Operating Unit Group 10, Appendix 9.15 of this Permit,
22 as approved pursuant to Permit Condition III.10.H.5.f, and as modified by Permit Conditions
23 III.10.H.3, III.10.I.1.h, III.10.I.1.b.x, and III.10.I.1.b.xii.

24 **III.10.I.1.f Recordkeeping Requirements [[WAC 173-303-380](#) and [WAC 173-303-680\(3\)](#)]**

25 **III.10.I.1.f.i** The Permittees will record and maintain in the WTP Unit operating record for the LAW
26 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data
27 compiled under the conditions of this Permit, in accordance with Permit Conditions
28 III.10.C.4 and 5, as modified by Permit Conditions III.10.H.3, III.10.I.1.h, III.10.I.1.b.x, and
29 III.10.I.1.b.xii.

30 **III.10.I.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of
31 all AWFCOs and/or lockouts, including the triggering parameters, reason for the deviation,
32 and recurrence of the incident. The Permittees will also record all incidents of AWFCO
33 system function failures, including the corrective measures taken to correct the condition that
34 caused the failure.

35 **III.10.I.1.f.iii** The Permittees will submit to Ecology an annual report each calendar year within ninety
36 (90) days following the end of the year. The report will include the following information:

- 37 A. Total dangerous and/or mixed waste feed processing time for the LAW Vitrification
38 System;
- 39 B. Date/Time of all LAW Vitrification System startups and shutdowns;
- 40 C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System
41 shutdowns caused by malfunction of either process or control equipment; and,

1 D.Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or
2 mixed waste feed cut-off due to deviations from Permit Table [III.10.I.F](#), as
3 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.

4 **III.10.I.1.f.iv**

The Permittees will submit an annual report to Ecology each calendar year within ninety
5 (90) days following the end of the year of all quarterly CEM Calibration Error and Annual
6 CEM Performance Specification Tests conducted, in accordance with Permit Condition
7 III.10.I.1.e.iii.

8 **III.10.I.1.g Closure**

9 The Permittees will close the LAW Vitrification System in accordance with Operating Unit Group
10 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

11 **III.10.I.1.h**

Periodic Emission Re-testing Requirements [\[WAC 173-303-670\(5\), WAC 173-303-670\(7\), and WAC 173-303-807\(2\), in accordance with WAC 173-303-680\(2\) and \(3\)\]](#)

12 **III.10.I.1.h.i**

13 **Dioxin and Furan Emission Testing**

14 A. Within eighteen (18) months of commencing operation pursuant to Permit Section
15 [III.10.I](#), the Permittees will submit to Ecology for approval, a Dioxin and Furan Emission
16 Test Plan (DFETP) for the performance of emission testing of the LAW Vitrification
17 System gases for dioxin and furans during “Normal Operating Conditions” as a permit
18 modification in accordance with Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f. The
19 DFETP will include all elements applicable to dioxin and furan emission testing included
20 in the “Previously Approved Demonstration Test Plan,” applicable EPA promulgated test
21 methods and procedures in effect at the time of the submittal, and projected
22 commencement and completion dates for dioxin and furan emission test. “Normal
23 Operating Conditions” will be defined for the purposes of this permit condition as
24 follows:

- 25 1. CO emissions, dangerous and/or mixed waste feedrate, and automatic waste feed cut-off
26 parameters specified in Permit Table [III.10.I.F](#) (as approved/modified pursuant to Permit
27 Conditions III.10.H.5 and III.10.H.3.d.v), that were established to maintain compliance
28 with Permit Condition III.10.I.1.b.iv as specified in Operating Unit Group 10, Appendix
29 9.15 of this Permit (as approved pursuant to Permit Condition III.10.H.3.d, and in
30 accordance with III.10.I.1.b.xii and III.10.I.1.c.xi), are held within the range of the
31 average value over the previous twelve (12) months and the set-point value specified in
32 Permit Table [III.10.I.F](#). The average value is defined as the sum of the rolling average
33 values recorded over the previous twelve (12) months divided by the number of rolling
34 averages recorded during that time. The average value will not include calibration data,
35 malfunction data, and data obtained when not processing dangerous and/or mixed waste;
36 and,
- 37 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
38 value over the previous twelve (12) months and the set-point value specified on Permit
39 Table [III.10.I.D](#) (as approved/modified pursuant to Permit Conditions III.10.H.5 and
40 III.10.H.3.d.v). Feedrates of organics, as measured by TOC, are held within the range of
41 the average value over the previous twelve (12) months. The average value is defined as
42 the sum of the rolling average values recorded over the previous twelve (12) months
43 divided by the number of rolling averages recorded during that time. The average value
44 will not include data obtained when not processing dangerous and/or mixed waste.

1 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan”
2 is defined to include the Demonstration Test Plan approved pursuant to Permit Condition
3 III.10.H.5.f.

- 4 B. Within sixty (60) days of Ecology’s approval of the DFETP, or within thirty-one (31)
5 months of commencing operation pursuant to Permit Section [III.10.I](#), whichever is later,
6 the Permittees will implement the DFETP approved pursuant to Permit Condition
7 III.10.I.1.h.i.A.
- 8 C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition
9 III.10.I.1.h.i.A, revised to include applicable EPA promulgated test methods and
10 procedures in effect at the time of the submittal, and projected commencement and
11 completion dates for dioxin and furan emission test as a permit modification in
12 accordance with Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f at twenty-four (24)
13 months from the implementation date of the testing required pursuant to Permit Condition
14 III.10.I.1.h.i.A and at reoccurring eighteen (18) month intervals from the implementation
15 date of the previously approved DFETP. The Permittees will implement these newly
16 approved revised DFETPs, every thirty-one (31) months from the previous approved
17 DFETP implementation date or within sixty (60) days of the newly Ecology approved
18 revised DFETP, whichever is later, for the duration of this Permit.
- 19 D. The Permittees will submit a summary of operating data collected pursuant to the
20 DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C to Ecology upon
21 completion of the tests. The Permittees will submit to Ecology the complete test report
22 within ninety (90) calendar days of completion of the testing. The test reports will be
23 certified as specified in [WAC 173-303-807\(8\)](#), in accordance with [WAC 173-303-680\(2\)](#)
24 and (3).
- 25 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with
26 Permit Conditions III.10.I.1.h.i.A and C show that one or more of the performance
27 standards listed in Permit Condition III.10.I.1.b, with the exception of Permit Condition
28 III.10.I.1.b.x, for the LAW Vitrification System were not met during the emission test,
29 the Permittees will perform the following actions:
- 30 1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System
31 under the mode of operation that resulted in not meeting the performance standard(s);
 - 32 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
33 performance standard(s), as specified in Permit Condition I.E.21;
 - 34 3. Investigate the cause of the failure and submit a report of the investigation findings to
35 Ecology within fifteen (15) days of discovery of not meeting the performance
36 standard(s);
 - 37 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
38 standard(s) documentation supporting a mode of operation where all performance
39 standards listed in Permit Condition III.I.1.b, with the exception of Permit Condition
40 III.10.I.1.b.x, for the LAW Vitrification System were met during the demonstration test,
41 if any such mode was demonstrated;
 - 42 5. Based on the information provided to Ecology by the Permittees pursuant to Permit
43 Conditions III.10.I.1.h.i.E.1 through 4 above, and any additional information, Ecology
44 may provide in writing, direction to the Permittees to stop dangerous waste and mixed
45 waste feed to the LAW Vitrification System and/or amend the mode of operation the

- 1 Permittees are allowed to continue operations prior to Ecology approval of the revised
2 Demonstration Test Plan pursuant to Permit Condition III.10. I.1.h.i.E.6; and,
- 3 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
4 meeting the performance standard(s) a revised Demonstration Test Plan requesting
5 approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e
6 and III.10.C.2.f. The revised Demonstration Test Plan must include substantive changes
7 to prevent failure from reoccurring reflecting performance under operating conditions
8 representative of the extreme range of normal conditions, and include revisions to Permit
9 Tables [III.10.I.D](#) and F.
- 10 F. If any calculations or testing results collected pursuant to the DFETPs in accordance with
11 Permit Conditions III.10.I.1.h.i A and C show that any emission rate for any constituent
12 listed in Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions
13 III.10.C.11.c or d is exceeded for LAW Vitrification System during the emission test, the
14 Permittees will perform the following actions:
- 15 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
16 emission rate(s), as specified in Permit Condition I.E.21;
- 17 2. Submit to Ecology additional risk information to indicate that the increased emissions
18 impact is off-set by decreased emissions impact from one or more constituents expected
19 to be emitted at the same time, and/or investigate the cause and impact of the exceedence
20 and submit a report of the investigation findings to Ecology within fifteen (15) days of
21 this discovery of exceeding the emission rate(s); and,
- 22 3. Based on the notification and any additional information, Ecology may provide, in
23 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
24 LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a
25 permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and [f](#), or III.10.C.2.g.
26 The revised Demonstration Test Plan must include substantive changes to prevent failure
27 from reoccurring reflecting performance under operating conditions representative of the
28 extreme range of normal conditions, and include revisions to Permit Tables [III.10.I.D](#)
29 and [III.10.I.F](#).

III.10.I.1.h.ii

Non-organic Emission Testing

- 31 A. Within forty-eight (48) months of commencing operation pursuant to Permit Section
32 [III.10.I](#), the Permittees will resubmit to Ecology for approval the “Previously Approved
33 Demonstration Test Plan” revised as a permit modification in accordance with Permit
34 Conditions III.10.C.2.e and III.10.C.2.f. The revised Demonstration Test Plan (RDTP)
35 will include applicable EPA promulgated test methods and procedures in effect at the
36 time of the submittal, projected commencement and completion dates for emission testing
37 to demonstrate performance standards specified in Permit Conditions III.10.I.1.b.ii, iii, v,
38 vi, and vii, and non-organic emissions as specified in Permit Table [III.10.I.E](#), as
39 approved/modified pursuant to Permit Conditions III.10.H.3.d and III.10.C.11.c or d,
40 under “Normal Operating Conditions.” “Normal Operating Conditions” will be defined
41 for the purposes of this permit condition as follows:
- 42 1. CO emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-
43 off parameters specified in Permit Table [III.10.I.F](#), as approved/modified pursuant to
44 Permit Conditions III.10.H.3.d and III.10.C.11.c or d, that were established to maintain
45 compliance with Permit Conditions III.10.I.1.b.ii, iii, v, vi, and vii, and non-organic

1 emissions, as specified in Permit Table [III.10.I.E](#), as specified in Operating Unit Group
2 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Conditions
3 III.10.H.3.d and III.10.C.11.c or d), are held within the range of the average value over
4 the previous twelve (12) months and the set-point value specified in Permit Table
5 [III.10.I.F](#). The average value is defined as the sum of the rolling average values
6 recorded over the previous twelve (12) months divided by the number of rolling
7 averages recorded during that time. The average value will not include calibration data,
8 malfunction data, and data obtained when not processing dangerous or mixed waste;
9 and,

- 10 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
11 value over the previous twelve (12) months and the set-point value specified in Permit
12 Table [III.10.I.D](#), as approved/modified pursuant to Permit Conditions III.10.H.3.d and
13 III.10.C.11.c or d. The average value is defined as the sum of all rolling average values
14 recorded over the previous twelve (12) months divided by the number of rolling
15 averages recorded during that time. The average value will not include data obtained
16 when not processing dangerous or mixed waste.

17 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan”
18 is defined to include the Demonstration Test Plan approved pursuant to Permit Condition
19 III.10.H.5.f.

- 20 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within sixty (60) months of
21 commencing operation pursuant to Permit Section [III.10.I](#), whichever is later, the
22 Permittees will implement the RDTP approved pursuant to Permit Condition
23 III.10.I.1.h.ii.A.
- 24 C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition
25 III.10.I.1.h.ii.A, revised to include applicable EPA promulgated test methods and
26 procedures in effect at the time of the submittal, and projected commencement and
27 completion dates for emission test as a permit modification in accordance with Permit
28 Conditions [III.10.C.2.e](#) and f at forty-eight (48) months from the implementation date of
29 the testing required pursuant to Permit Condition [III.10.I.1.h.ii.A](#) and at reoccurring
30 forty-eight (48) month intervals from the implementation date of the previously approved
31 RDTP. The Permittees will implement these newly approved revised RDTP, every sixty
32 (60) months from the previous approved RDTP implementation date or within sixty (60)
33 days of the newly Ecology approved revised RDTP, whichever is later, for the duration of
34 this Permit.
- 35 D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs
36 in accordance with Permit Conditions [III.10.I.1.h.ii.A](#) and C to Ecology upon completion
37 of the tests. The Permittees will submit to Ecology the complete test report within ninety
38 (90) calendar days of completion of the testing. The test reports will be certified pursuant
39 to [WAC 173-303-807](#)(8), in accordance with [WAC 173-303-680](#)(2) and (3).
- 40 E. If any calculations or testing results collected pursuant to the RDTPs in accordance with
41 Permit Conditions [III.10.I.1.h.ii.A](#) and C show that any emission rate for any constituent
42 listed in Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions
43 III.10.H.3.d and III.10.C.11.c or d, is exceeded for LAW Vitrification System during the
44 emission test, the Permittees will perform the following actions:

- 1 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
2 emission rate(s), as specified in Permit condition I.E.21;
- 3 2. Submit to Ecology additional risk information to indicate that the increased emissions
4 impact is offset by decreased emissions impact from one or more constituents expected
5 to be emitted at the same time, and/or investigate the cause and impact of the exceedence
6 and submit a report of the investigation findings to Ecology within fifteen (15) days of
7 this discovery of exceeding the emission rate(s); and,
- 8 3. Based on the notification and any additional information, Ecology may provide, in
9 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
10 LAW Vitrification System and/or to submit a RDTP as a permit modification pursuant
11 to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g. The RDTP must include
12 substantive changes to prevent failure from reoccurring reflecting performance under
13 operating conditions representative of the extreme range of normal conditions, and
14 include revisions to Permit Tables [III.10.I.D](#) and [III.10.I.F](#).
- 15 F. If any calculations or testing results collected pursuant to the RDTPs in accordance with
16 Permit Conditions [III.10.I.1.h.ii.A](#) and C show that one or more of the performance
17 standards listed in Permit Condition III.10.I.1.b, with the exception of Permit Condition
18 III.10.I.1.b.x, for the LAW Vitrification System were not met during the emission test,
19 the Permittees will perform the following actions:
 - 20 1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System
21 under the mode of operation that resulted in not meeting the performance standard(s);
 - 22 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
23 performance standard(s), as specified in Permit condition I.E.21;
 - 24 3. Investigate the cause of the failure and submit a report of the investigation findings to
25 Ecology within fifteen (15) days of discovery of not meeting the performance
26 standard(s);
 - 27 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
28 standard(s) documentation supporting a mode of operation where all performance
29 standards listed in Permit Condition III.I.1.b, with the exception of Permit Condition
30 III.10.I.1.b.x, for the LAW Vitrification System were met during the demonstration test,
31 if any such mode was demonstrated;
 - 32 5. Based on the information provided to Ecology by the Permittees pursuant to Permit
33 Conditions [III.10.I.1.h.ii.F.1](#) through 4 above, and any additional information, Ecology
34 may provide in writing, direction to the Permittees to stop dangerous and/or mixed waste
35 feed to the LAW Vitrification System and/or amend the mode of operation the
36 Permittees are allowed to continue operations prior to Ecology approval of the RDTP
37 pursuant to Permit Condition [III.10.I.1.h.ii.F.6](#); and
 - 38 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
39 meeting the performance standard(s) a RDTP requesting approval to retest as a permit
40 modification pursuant to Permit Conditions III.10.C.2.e and f. The RDTP must include
41 substantive changes to prevent failure from reoccurring reflecting performance under
42 operating conditions representative of the extreme range of normal conditions, and
43 include revisions to Permit Tables [III.10.I.D](#) and [F](#).

1 **III.10.I.1.h.iii**

Other Emission Testing

2 A. Within seventy-eight (78) months of commencing operation pursuant to Permit Section
3 [III.10.I](#), the Permittees will resubmit to Ecology for approval the “Previously Approved
4 Demonstration Test Plan” revised as a permit modification in accordance with Permit
5 Conditions [III.10.C.2.e](#) and f. The RDTP will include applicable EPA promulgated test
6 methods and procedures in effect at the time of the submittal, projected commencement
7 and completion dates for emission testing to demonstrate performance standards as
8 specified in Permit Conditions III.10.I.1.b.viii and ix, and emissions as specified in
9 Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions III.10.H.3.d
10 and III.10.C.11.c or d., not addressed under Permit Conditions III.10.I.1.h.i or ii under
11 “Normal Operating Conditions.” “Normal Operating Conditions” will be defined for the
12 purposes of this permit condition as follows:

- 13 1. CO emissions, dangerous and/or mixed waste feed-rate, and AWFCO parameters
14 specified in Permit Table [III.10.I.F](#), as approved/modified pursuant to Permit Condition
15 III.10.H.3.d and III.10.C.11.c or d, that were established to maintain compliance with
16 Permit Conditions III.10.I.1.b.viii and ix, and emissions as specified in Permit Table
17 [III.10.I.E](#), not addressed under Permit Conditions III.10.I.1.h.i or ii. as specified in
18 Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit
19 Condition III.10.H.3.d, and in accordance with Permit Conditions III.10.I.1.b.xii and
20 III.10.I.1.c.xi are held within the range of the average value over the previous twelve
21 (12) months and the set-point value specified on Permit Table [III.10.I.F](#). The average
22 value is defined as the sum of all rolling average values recorded over the previous
23 twelve (12) months divided by the number of rolling averages recorded during that time.
24 The average value will not include calibration data, malfunction data, and data obtained
25 when not processing dangerous and/or mixed waste; and,
- 26 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
27 value over the previous twelve (12) months and the set-point value specified in Permit
28 Table [III.10.I.D](#), as approved/modified pursuant to Permit Conditions III.10.H.3.d and
29 III.10.C.11.c or d. Feedrates of organics as measured by TOC are held within the range
30 of the average value over the previous twelve (12) months. The average value is defined
31 as the sum of the rolling average values recorded over the previous twelve (12) months
32 divided by the number of rolling averages recorded during that time. The average value
33 will not include data obtained when not processing dangerous and/or mixed waste.

34 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan”
35 is defined to include the Demonstration Test Plan approved pursuant to Permit Condition
36 III.10.H.5.f.

- 37 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within ninety-one (91)
38 months of commencing operation pursuant to Permit Section [III.10.I](#), whichever is later,
39 the Permittees will implement the RDTP approved pursuant to Permit Condition
40 III.10.I.1.h.iii.A.
- 41 C. The Permittees will submit a summary of operating data collected pursuant to the RDTPs
42 in accordance with Permit Condition III.10.I.1.h.iii.A to Ecology upon completion of the
43 tests. The Permittees will submit to Ecology the complete test report within ninety (90)
44 calendar days of completion of the testing. The test reports will be certified as specified

1 in [WAC 173-303-807](#)(8), in accordance with Permit Condition [WAC 173-303-680](#)(2)
2 and (3).

- 3 D. If any calculations or testing results show that one or more of the performance standards
4 listed in Permit Condition III.10.I.1.b, with the exception of Permit Condition
5 III.10.I.1.b.x, for the LAW Vitrification System were not met during the emission test,
6 the Permittees will perform the following actions:
- 7 1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System
8 under the mode of operation that resulted in not meeting the performance standard(s);
 - 9 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
10 performance standard(s), as specified in Permit Condition I.E.21;
 - 11 3. Investigate the cause of the failure and submit a report of the investigation findings to
12 Ecology within fifteen (15) days of discovery of not meeting the performance
13 standard(s);
 - 14 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
15 standard(s) documentation supporting a mode of operation where all performance
16 standards listed in Permit Condition III.I.1.b, with the exception of Permit Condition
17 III.10.I.1.b.x, for the LAW Vitrification System were met during the demonstration test,
18 if any such mode was demonstrated;
 - 19 5. Based on the information provided to Ecology by the Permittees pursuant to Permit
20 Conditions III.10.I.1.h.iii.D.1 through 4 above, and any additional information, Ecology
21 may provide in writing, direction to the Permittees to stop dangerous and/or mixed waste
22 feed to the LAW Vitrification System and/or amend the mode of operation the
23 Permittees are allowed to continue operations prior to Ecology approval of the RDTP,
24 pursuant to Permit Condition III.10.I.h.1.iii.D.6.; and
 - 25 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
26 meeting the performance standard(s) a RDTP requesting approval to retest as a permit
27 modification pursuant to Permit Conditions [III.10.C.2.e](#) and f. The RDTP must include
28 substantive changes to prevent failure from reoccurring reflecting performance under
29 operating conditions representative of the extreme range of normal conditions, and
30 include revisions to Permit Tables [III.10.I.D](#) and [III.10.I.F](#).
- 31 E. If any calculations or testing results show that any emission rate for any constituent listed
32 in Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions
33 III.10.C.11.c or d, is exceeded for LAW Vitrification System during the emission test, the
34 Permittees will perform the following actions:
- 35 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
36 emission rate(s), as specified in Permit Condition I.E.21;
 - 37 2. Submit to Ecology additional risk information to indicate that the increased emissions
38 impact is offset by decreased emissions impact from one or more constituents expected
39 to be emitted at the same time, and/or investigate the cause and impact of the exceedence
40 of the emission rate(s) and submit a report of the investigation findings to Ecology
41 within fifteen (15) days of the discovery of the exceedence of the emission rate(s); and
 - 42 3. Based on the notification and any additional information, Ecology may provide, in
43 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
44 LAW Vitrification System and/or to submit a RDTP as a permit modification pursuant

1 to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g. The RDTP must include
2 substantive changes to prevent failure from reoccurring reflecting performance under
3 operating conditions representative of the extreme range of normal conditions, and
4 include revisions to Permit Tables [III.10.I.D](#) and F.

DRAFT

Table III.10.I.A - LAW Vitrification System Description^a

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.I.A will be completed in accordance with Permit Condition III.10.H.5.e.x., prior to initiating Permit Condition III.10.I.1. See Permit Table III.10.H.A for the current LAW Vitrification System Description.			

Table III.10.I.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.I.B will be completed in accordance with Permit Condition III.10.H.5.b.vii, prior to initiating Permit Condition III.10.I.1. See Permit Table III.10.H.B for the current LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains. ^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

Table III.10.I.C - LAW Vitrification 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
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.I.C will be completed in accordance with Permit Condition III.10.H.5.e.ix, prior to initiating Permit Condition III.10.I.1 See Permit Table III.10.H.C for the current LAW Vitrification Systems Process and Leak Detection System Instruments and Parameters.								

Table III.10.I.D - Maximum Feed Rates to LAW Vitrification System (RESERVED)

Description of Waste	Normal Operation
Dangerous and/or Mixed Waste Feed Rate	RESERVED
Ash Feed Rate	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED
Total Metal Feed Rates	RESERVED

1
2

Table III.10.I.E - LAW Vitrification System Estimated Emission Rates (RESERVED)

CHEMICALS	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

3
4

**TABLE III.10.I.F - LAW Vitrification System Waste Feed Cut-off Parameters¹
(RESERVED)**

Sub-System Designation	Instrument Tag Number	Parameter Description	Set-Points During Normal Operation
RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

¹A continuous monitoring system will be used as defined in Permit Section [III.10.C.1.](#)

²Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table [III.10.I.D.](#) of this Permit

5

1 **III.10.J HLW VITRIFICATION SYSTEM – SHORT TERM MISCELLANEOUS THERMAL**
2 **TREATMENT UNIT-SHAKEDOWN, DEMONSTRATION TEST, AND POST-**
3 **DEMONSTRATION TEST**

4 For purposes of Permit Section III.10.J, where reference is made to [WAC 173-303-640](#), the
5 following substitutions apply: substituting the terms “HLW Vitrification System” for “tank
6 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and
7 “sub-system(s) or sub-system equipment of a HLW Vitrification System” for “component(s),” in
8 accordance with WAC 173-303-680.

9 **III.10.J.1 General Conditions During Shakedown, Demonstration Test, and Post-**
10 **Demonstration Test for HLW Vitrification System**

11 **III.10.J.1.a Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-**
12 **680(2) and (3), and WAC 173-303-340]**

13 **III.10.J.1.a.i** The Permittees will construct the HLW Vitrification System (listed in Permit Tables
14 [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant to Permit Condition III.10.J.5) as
15 specified in Permit Condition III.10.J.1 and Operating Unit Group 10, Addendum C of this
16 Permit, and Operating Unit Group 10, Appendices 10.1 through 10.15 and 10.17 of this
17 Permit, as approved pursuant to Permit Conditions III.10.J.5.a through d, and III.10.J.5.f.

18 **III.10.J.1.a.ii** The Permittees will construct all containment systems for the HLW Vitrification System as
19 specified in Operating Unit Group 10, Addendum C of this Permit, and Operating Unit
20 Group 10, Appendices 10.2, 10.4, through 10.14 of this Permit, as approved pursuant to
21 Permit Conditions III.10.J.5.a through d.

22 **III.10.J.1.a.iii** The Permittees will ensure all certifications required by specialists (e.g., IQRPE,
23 independent corrosion expert, independent qualified installation inspector, etc.) use the
24 following statement or equivalent pursuant to Permit Condition III.10.C.10:
25 “I, (Insert Name), have (choose one or more of the following: overseen, supervised,
26 reviewed, and/or certified) a portion of the design or installation of a new HLW Vitrification
27 system or component located at (address), and owned/operated by (name(s)). My duties
28 were: (e.g., installation inspector, testing for tightness, etc.), for the following HLW
29 Vitrification system components (e.g., the venting piping, etc.), as required by the
30 Dangerous Waste Regulations, namely, [WAC 173-303-640](#)(3) (applicable paragraphs (i.e.,
31 (a) through (g)) in accordance with [WAC 173-303-680](#)).

32 “I certify under penalty of law that I have personally examined and am familiar with the
33 information submitted in this document and all attachments and that, based on my inquiry of
34 those individuals immediately responsible for obtaining the information, I believe that the
35 information is true, accurate, and complete. I am aware that there are significant penalties
36 for submitting false information, including the possibility of fine and imprisonment.”

37 **III.10.J.1.a.iv** The Permittees must ensure that proper handling procedures are adhered to in order to
38 prevent damage to the HLW Vitrification System during installation. Prior to covering,
39 enclosing, or placing the new HLW Vitrification System or component in use, an
40 independent, qualified, installation inspector or an IQRPE, either of whom is trained and
41 experienced in the proper installation of similar systems or components, must inspect the
42 system for the presence of any of the following items:

43 A. Weld breaks;

- 1 B. Punctures;
- 2 C. Scrapes of protective coatings;
- 3 D. Cracks;
- 4 E. Corrosion; and,
- 5 F. Other structural damage or inadequate construction/installation.

6 All discrepancies must be remedied before the HLW Vitrification system is covered,
7 enclosed, or placed in use [[WAC 173-303-640\(3\)\(c\)](#), in accordance with [WAC 173-303-](#)
8 [680\(2\)](#) and (3)].

9 **III.10.J.1.a.v**

10 For the HLW Vitrification System or components that are placed underground and that are
11 backfilled, the Permittees must provide a backfill material that is a non-corrosive, porous,
12 homogeneous substance. The backfill must be installed so that it is placed completely
13 around the HLW Vitrification System and compacted to ensure that the HLW Vitrification
14 System is fully and uniformly supported [[WAC 173-303-640\(3\)\(d\)](#), in accordance with
[WAC 173-303-680\(2\)](#) and (3)].

15 **III.10.J.1.a.vi**

16 The Permittees must test for tightness the HLW Vitrification System or components, prior to
17 being covered, enclosed, or placed into use. If the HLW Vitrification System or components
18 are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be
19 performed prior to the HLW Vitrification System being covered, enclosed, or placed in use
[[WAC 173-303-640\(3\)\(e\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)].

20 **III.10.J.1.a.vii**

21 The Permittees must ensure the HLW Vitrification System equipment is supported and
22 protected against physical damage and excessive stress due to settlement, vibration,
23 expansion, or contraction [[WAC 173-303-640\(3\)\(f\)](#), in accordance with [WAC 173-303-](#)
[680\(2\)](#) and (3)].

24 **III.10.J.1.a.viii**

25 The Permittees must provide the type and degree of corrosion protection recommended by
26 an independent corrosion expert, based on the information provided in Operating Unit Group
27 10, Appendices 10.9 and 10.11 of this Permit, as approved pursuant to Permit Conditions
28 III.10.J.5.b.i, III.10.J.5.b.iv, III.10.J.5.b.v, III.10.J.5.c.i, III.10.J.5.c.iv, III.10.J.5.c.v,
29 III.10.J.5.d.i, III.10.J.5.d.iv, and III.10.J.5.d.v, or other corrosion protection if Ecology
30 believes other corrosion protection is necessary to ensure the integrity of the HLW
31 Vitrification System during use of the HLW Vitrification System. The installation of a
32 corrosion protection system that is field fabricated must be supervised by an independent
33 corrosion expert to ensure proper installation [[WAC 173-303-640\(3\)\(g\)](#), in accordance with
[WAC 173-303-680\(2\)](#) and (3)].

34 **III.10.J.1.a.ix**

35 Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will
36 obtain and keep on file in the WTP Unit operating record, written statements by those
37 persons required to certify the design of the HLW Vitrification System and supervise the
38 installation of the HLW Vitrification System, as specified in [WAC 173-303-640\(3\)\(b\)](#), (c),
39 (d), (e), (f), and (g), in accordance with [WAC 173-303-680](#), attesting that the HLW
40 Vitrification system and corresponding containment system listed in Permit Tables [III.10.J.A](#)
41 and [III.10.J.B](#), as approved/modified pursuant to Permit Condition III.10.J.5, were properly
42 designed and installed, and that repairs, in accordance with [WAC 173-303-640\(3\)\(c\)](#) and (e),
43 were performed [[WAC 173-303-640\(3\)\(a\)](#) and [WAC 173-303-640\(3\)\(h\)](#), in accordance with
[WAC 173-303-680\(3\)](#)].

- 1 **III.10.J.1.a.x** The independent HLW Vitrification System installation inspection and subsequent written
2 statements will be certified in accordance with [WAC 173-303-810](#)(13)(a), as modified
3 pursuant to Permit Condition III.10.J.1.a.iii, comply with all requirements of [WAC 173-303-](#)
4 [640](#)(3)(h) in accordance with [WAC 173-303-680](#), and will consider, but not be limited to,
5 the following LAW Vitrification System installation documentation:
- 6 A. Field installation report with date of installation;
 - 7 B. Approved welding procedures;
 - 8 C. Welder qualification and certifications;
 - 9 D. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical
10 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American
11 Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
 - 12 E. Tester credentials;
 - 13 F. Field inspector credentials;
 - 14 G. Field inspector reports;
 - 15 H. Field waiver reports; and,
 - 16 I. Non-compliance reports and corrective action (including field waiver reports) and repair
17 reports.
- 18 **III.10.J.1.a.xi** The Permittees will ensure periodic integrity assessments are conducted on the HLW
19 Vitrification System, listed in Permit Table [III.10.J.A](#), as approved/modified pursuant to
20 Permit Condition III.10.J.5, over the term of this Permit, in accordance with [WAC 173-303-](#)
21 [680](#)(2) and (3) as specified in [WAC 173-303-640](#)(3)(b), following the description of the
22 integrity assessment program and schedule in Operating Unit Group 10, Addendum E of
23 this Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c. Results
24 of the integrity assessments will be included in the WTP Unit operating record until ten (10)
25 years after post-closure, or corrective action is complete and certified, whichever is later.
- 26 **III.10.J.1.a.xii** The Permittees will address problems detected during the HLW Vitrification System
27 integrity assessments specified in Permit Condition III.10.J.1.a.xi following the integrity
28 assessment program in Operating Unit Group 10, Addendum E of this Permit, as approved
29 pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c.
- 30 **III.10.J.1.a.xiii** All process monitors/instruments as specified in Permit Table [III.10.J.F](#), as
31 approved/modified pursuant to Permit Condition III.10.J.5, will be equipped with
32 operational alarms to warn of deviation, or imminent deviation from the limits specified in
33 Permit Table [III.10.J.F](#).
- 34 **III.10.J.1.a.xiv** The Permittees will install and test all process and leak detection system
35 monitors/instrumentation as specified in Permit Tables [III.10.J.C](#) and [III.10.J.F](#), as
36 approved/modified pursuant to Permit Condition III.10.J.5, in accordance with Operating
37 Unit Group 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as approved pursuant to
38 Permit Conditions III.10.J.5.d.x and III.10.J.5.f.xvi.
- 39 **III.10.J.1.a.xv** Except during periods of HLW Vitrification System start up and shut down, no dangerous
40 and/or mixed waste will be treated in the HLW Vitrification System unless the operating
41 conditions specified under Permit Condition III.10.J.1.c are complied with.

- 1 **III.10.J.1.a.xvi** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
2 materials in the HLW Vitrification System if these substances could cause the subsystem,
3 subsystem equipment, or the containment system to rupture, leak, corrode, or otherwise fail
4 [[WAC 173-303-640\(5\)\(a\)](#)], in accordance with [[WAC 173-303-680\(2\)](#)]. This condition is not
5 applicable to corrosion of HLW Vitrification System sub-system and sub-system equipment
6 that are expected to be replaced as part of normal operations (e.g., melters).
- 7 **III.10.J.1.a.xvii** The Permittees will operate the HLW Vitrification System to prevent spills and overflows
8 using description of controls and practices as required under [[WAC 173-303-640\(5\)\(b\)](#)]
9 described in Permit Condition [III.10.C.5](#), and Operating Unit Group 10, Appendix 10.18 of
10 this Permit, as approved pursuant to Permit Condition III.10.J.5.e [[WAC 173-303-640\(5\)\(b\)](#)],
11 in accordance with [[WAC 173-303-680\(2\)](#)] and (3), and [[WAC 173-303-806\(4\)\(c\)\(ix\)](#)].
- 12 **III.10.J.1.a.xviii** For routinely non-accessible HLW Vitrification System sub-systems, as specified in
13 Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit
14 Condition [III.10.J.5.e.vi](#), the Permittees will mark all routinely non-accessible HLW
15 Vitrification System sub-systems access points with labels or signs to identify the waste
16 contained in each HLW Vitrification System sub-system. The label, or sign, must be legible
17 at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
18 manner which adequately warns employees, emergency response personnel, and the public
19 of the major risk(s) associated with the waste being stored or treated in the HLW
20 Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-
21 accessible” means personnel are unable to enter these areas while waste is being managed in
22 them [[WAC 173-303-640\(5\)\(d\)](#)], in accordance with [[WAC 173-303-680\(2\)](#)].
- 23 **III.10.J.1.a.xix** For all HLW Vitrification System sub-systems not addressed in Permit Condition
24 [III.10.J.1.a.xviii](#), the Permittees will mark all these HLW Vitrification System sub-systems
25 holding dangerous and/or mixed waste with labels or signs to identify the waste contained in
26 the HLW Vitrification System sub-systems. The labels, or signs, must be legible at a
27 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
28 manner which adequately warns employees, emergency response personnel, and the public
29 of the major risk(s) associated with the waste being stored or treated in the HLW
30 Vitrification System sub-systems [[WAC 173-303-640\(5\)\(d\)](#)], in accordance with [[WAC 173-
31 303-680\(2\)](#)].
- 32 **III.10.J.1.a.xx** The Permittees will ensure that the containment systems for the HLW Vitrification System
33 sub-systems listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant
34 to Permit Condition III.10.J.5, are free of cracks or gaps to prevent any migration of
35 dangerous and/or mixed waste or accumulated liquid out of the system to the soil,
36 groundwater, or surface water at any time during use of the HLW Vitrification System sub-
37 systems. Any indication that a crack or gap may exist in the containment systems will be
38 investigated and repaired in accordance with Operating Unit Group 10, Appendix 10.18 of
39 this Permit, as approved pursuant to Permit Condition III.10.J.5.e.v [[WAC 173-303-
40 640\(4\)\(b\)\(i\)](#)], [[WAC 173-303-640\(4\)\(e\)\(i\)\(C\)](#)], and [[WAC 173-303-640\(6\)](#)], in accordance with
41 [[WAC 173-303-680\(2\)](#)] and (3), [[WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)], and [[WAC 173-303-320](#)].
- 42 **III.10.J.1.a.xxii** The Permittees must immediately, and safely, remove from service any HLW Vitrification
43 System or secondary containment system which, through an integrity assessment, is found to
44 be “unfit for use” as defined in [[WAC 173-303-040](#)], following Permit Conditions
45 III.10.J.1.a.xxiii.A through D, and F. The affected HLW Vitrification System, or secondary

1 containment system, must be either repaired or closed in accordance with Permit Condition
2 III.10.J.1.a.xxiii.E. [[WAC 173-303-640](#)(7)(e) and (f), and [WAC 173-303-640](#)(8), in
3 accordance with [WAC 173-303-680](#)(3)].

4 **III.10.J.1.a.xxii**

5 An impermeable coating, as specified in Operating Unit Group 10, Appendices 10.4, 10.5,
6 10.7, 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition
7 III.10.J.5.b.v, will be maintained for all concrete containment systems and concrete portions
8 of containment systems for each HLW Vitrification System sub-systems listed in Permit
9 Tables [III.10.J.A](#) and [III.10.J.B](#) as approved/modified pursuant to Permit Condition III.10.J.5
10 (concrete containment systems that do not have a liner, pursuant to [WAC 173-303-](#)
11 [640](#)(4)(e)(i), in accordance with [WAC 173-303-680](#)(2), and have construction joints, will
12 meet the requirements of [WAC 173-303-640](#)(4)(e)(ii)(C), in accordance with [WAC 173-](#)
13 [303-680](#)(2). The coating will prevent migration of any dangerous and mixed waste into the
concrete. All coatings will meet the following performance standards:

- 14 A. The coating must seal the containment surface such that no cracks, seams, or other
15 avenues through which liquid could migrate, are present;
- 16 B. The coating must be of adequate thickness and strength to withstand the normal operation
17 of equipment and personnel within the given area such that degradation or physical
18 damage to the coating or lining can be identified and remedied before dangerous and
19 mixed waste could migrate from the system; and,
- 20 C. The coating must be compatible with the dangerous and mixed waste, treatment reagents,
21 or other materials managed in the containment system [[WAC 173-303-640](#)(4)(e)(ii)(D),
22 in accordance with [WAC 173-303-680](#)(2) and (3), and [WAC 173-303-806](#)(4)(i)(i)(A)].

23 **III.10.J.1.a.xxiii**

24 The Permittees will inspect all containment systems for the HLW Vitrification System sub-
25 systems listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant to
26 Permit Condition III.10.J.5, in accordance with the Inspection Schedule specified in
27 Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit
28 Conditions III.10.J.5.e.i and III.10.C.5.c, and take the following actions if a leak or spill of
29 dangerous and/or mixed waste is detected in these containment systems [[WAC 173-303-](#)
30 [640](#)(5)(c) and [WAC 173-303-640](#)(6), in accordance with [WAC 173-303-680](#)(2) and (3),
[WAC 173-303-320](#), and [WAC 173-303-806](#)(4)(i)(i)(B)]:

- 31 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW
32 Vitrification System sub-systems or secondary containment system;
- 33 B. Determine the source of the dangerous and/or mixed waste;
- 34 C. Remove the dangerous and/or mixed waste from the containment area in accordance with
35 [WAC 173-303-680](#)(2) and (3), as specified in [WAC 173-303-640](#)(7)(b). The dangerous
36 and/or mixed waste removed from containment areas of the HLW Vitrification System
37 sub-systems will be, as a minimum, managed as mixed waste;
- 38 D. If the cause of the release was a spill has not damaged the integrity of the HLW
39 Vitrification System sub-system, the Permittees may return the HLW Vitrification
40 System sub-system to service in accordance with [WAC 173-303-680](#)(2) and (3), as
41 specified in [WAC 173-303-640](#)(7)(e)(ii). In such case, the Permittees will take action to
42 ensure the incident that caused the dangerous and/or mixed waste to enter the
43 containment system will not re-occur [[WAC 173-303-320](#)(3)].

- 1 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the
2 primary HLW Vitrification System into the secondary containment system, or the system
3 is unfit for use as determined through an integrity assessment or other inspection, the
4 Permittees will comply with the requirements of [WAC 173-303-640\(7\)](#) and take the
5 following actions:
- 6 1. Close the HLW Vitrification System Sub-system following procedures in [WAC 173-303-](#)
7 [640\(7\)\(e\)\(i\)](#), in accordance with [WAC 173-303-680](#) and Operating Unit Group 10,
8 Addendum H of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#), or,
 - 9 2. Repair and re-certify (in accordance with [WAC 173-303-810\(13\)\(a\)](#), as modified
10 pursuant to Permit Condition III.10.J.1.a.iii) the HLW Vitrification System in accordance
11 with Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to
12 Permit Condition III.10.J.5.e.v, before the HLW Vitrification System is placed back into
13 service [[WAC 173-303-640\(7\)\(e\)\(iii\)](#) and [WAC 173-303-640\(7\)\(f\)](#), in accordance with
14 [WAC 173-303-680](#)].
- 15 F. The Permittees will document, in the WTP Unit operating record, actions/procedures
16 taken to comply with A. through E. above, as specified in [WAC 173-303-640\(6\)\(d\)](#), in
17 accordance with [WAC 173-303-680\(2\)](#) and (3).
- 18 G. In accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-680\(3\)](#), the Permittees will
19 notify and report releases to the environment to Ecology, as specified in [WAC 173-303-](#)
20 [640\(7\)\(d\)](#).

21 **III.10.J.1.a.xxiv**

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 will provide the information in A, B, and C, listed below. The Permittees will 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\(4\)\(i\)\(i\)\(B\)](#):

- 28 A. Reasons for delayed removal;
- 29 B. Measures implemented to ensure continued protection of human health and the
30 environment; and,
- 31 C. Current actions being taken to remove liquids from secondary containment.

32 **III.10.J.1.a.xxv**

All air pollution control devices and capture systems in the HLW Vitrification System will be maintained and operated at all times 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 HLW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets will be established.

38 **III.10.J.1.a.xxvi**

In all future narrative permit submittals, the Permittees will include HLW Vitrification sub-system names with the sub-system designation.

40 **III.10.J.1.a.xxvii**

41 Modifications to approved design, plans, and specifications in Operating Unit Group 10 of
42 this Permit for the HLW Vitrification System will be allowed only in accordance with Permit Conditions III.10.C.2.e and f, or III.10.C.2.g, III.10.C.9.d, e, and h.

- 1 **III.10.J.1.a.xxviii** For any portion of the HLW Vitrification System that has the potential for formation and
2 accumulation of hydrogen gases, the Permittees will operate the portion to maintain
3 hydrogen levels below the LEL [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)].
- 4 **III.10.J.1.a.xxix** For each HLW Vitrification System sub-system holding dangerous waste which are acutely
5 or chronically toxic by inhalation, the Permittees will operate the system to prevent escape
6 of vapors, fumes or other emissions into the air [[WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#) and [WAC](#)
7 [173-303-640\(5\)\(e\)](#) in accordance with [WAC 173-303-680](#)].
- 8 **III.10.J.1.b Performance Standards**
- 9 **III.10.J.1.b.i** The HLW Vitrification System must achieve a DRE of 99.99% for the PODCs listed below
10 [40 CFR §63.1203(c)(1) and 40CFR 63.1203(c)(2), in accordance with [WAC 173-303-](#)
11 [680\(2\)](#)].
- 12 RESERVED
- 13 DRE in this Permit condition will be calculated in accordance with the formula given below:
14 $DRE = [1 - (W_{out}/W_{in})] \times 100\%$
- 15 Where:
- 16 W_{in} = mass feed rate of one PODC in a waste feed stream; and
17 W_{out} = mass emission rate of the same PODC present in exhaust emissions prior to release to
18 the atmosphere.
- 19 **III.10.J.1.b.ii** Particulate matter emissions from the HLW Vitrification System will not exceed 34
20 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with [WAC 173-303-](#)
21 [680\(2\)](#)];
- 22 **III.10.J.1.b.iii** Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not
23 exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with [WAC 173-303-](#)
24 [680\(2\)](#)];
- 25 **III.10.J.1.b.iv** Dioxin and Furan TEQ emissions from the HLW Vitrification System will not exceed 0.2
26 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with [WAC 173-303-680\(2\)](#)];
- 27 **III.10.J.1.b.v** Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm, [40
28 CFR §63.1203(b)(2), in accordance with [WAC 173-303-680\(2\)](#)];
- 29 **III.10.J.1.b.vi** Lead and cadmium emissions from the HLW Vitrification System will not exceed 120
30 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with [WAC 173-303-680\(2\)](#)];
- 31 **III.10.J.1.b.vii** Arsenic, beryllium, and chromium emissions from the HLW Vitrification System will not
32 exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with [WAC 173-303-](#)
33 [680\(2\)](#)];
- 34 **III.10.J.1.b.viii** CO emission from the HLW Vitrification System will not exceed 100 ppmv by volume, over
35 an hourly rolling average (as measured and recorded by the continuous monitoring system),
36 dry [40 CFR §63.1203(b)(5)(i), in accordance with [WAC 173-303-680\(2\)](#)];
- 37 **III.10.J.1.b.ix** Hydrocarbon emission from the HLW Vitrification System will not exceed 10 ppmv by
38 volume, over an hourly rolling average (as measured and recorded by the continuous
39 monitoring system during demonstration testing required by this Permit), dry basis, and
40 reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with [WAC 173-303-680\(2\)](#)];

- 1 **III.10.J.1.b.x** If the emissions from the HLW Vitrification System exceed the emission rates listed in
2 Permit Table [III.10.J.E](#), as approved pursuant to Permit Condition III.10.C.11.b, the
3 Permittees will notify Ecology, in accordance with Permit Condition III.10.J.3.d.vii [[WAC](#)
4 [173-303-680](#)(2) and (3), and [WAC 173-303-815](#)(2)(b)(ii)].
- 5 The emission limits specified in Permit Conditions III.10.J.1.b.i through III.10.J.1.b.x above,
6 will be met for the HLW Vitrification System by limiting feed rates as specified in Permit
7 Tables [III.10.J.D](#) and [III.10.J.F](#), as approved/modified pursuant to Permit Condition
8 III.10.J.5, compliance with operating conditions specified in Permit Condition III.10.J.1.c
9 (except as specified in Permit Condition III.10.J.1.b.xii), and compliance with Permit
10 Condition III.10.J.1.b.xi;
- 11 **III.10.J.1.b.xi** Treatment effectiveness, feedrates and operating rates for dangerous and mixed waste
12 management units contained in the HLW Building, but not included in Permit Table
13 [III.10.J.A](#), as approved/modified pursuant to Permit Condition III.10.J.5, will be as specified
14 in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions and basis
15 which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved
16 pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition,
17 Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its
18 approval pursuant to either Permit Conditions III.10.C.11.c or III.10.C.11.d [[WAC 173-303-](#)
19 [680](#)(2) and (3), and [WAC 173-303-815](#)(2)(b)(ii)]; and,
- 20 **III.10.J.1.b.xii** Except during periods of HLW Vitrification System startup and shutdown, compliance with
21 the operating conditions specified in Permit Condition III.10.J.1.c, will be regarded as
22 compliance with the required performance standards identified in Permit Conditions
23 III.10.J.1.b.i through x. However, if it is determined that during the effective period of this
24 Permit that compliance with the operating conditions in Permit Condition III.10.J.1.c is not
25 sufficient to ensure compliance with the performance standards specified in Permit
26 Conditions III.10.J.1.b.i through x, the Permit may be modified, revoked, or reissued
27 pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, or III.10.C.2.g.
- 28 **III.10.J.1.c** **Operating Conditions [[WAC 173-303-670](#)(6), in accordance with [WAC 173-303-680](#)(2)**
29 **and (3)].**
- 30 The Permittees will operate the HLW Vitrification System in accordance with Operating Unit Group
31 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi, and Operating
32 Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e,
33 and Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit
34 Condition III.10.J.5.f, except as modified pursuant to Permit Conditions III.10.J.1.b.xii, III.10.J.2,
35 III.10.J.3, III.10.J.4, and in accordance with the following:
- 36 **III.10.J.1.c.i** The Permittees will operate the HLW Vitrification System in order to maintain the systems
37 and process parameters listed in Permit Tables [III.10.J.C](#) and [III.10.J.F](#), as
38 approved/modified pursuant to Permit Condition III.10.J.5, within the set-points specified in
39 Permit Table [III.10.J.F](#).
- 40 **III.10.J.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as
41 approved/modified pursuant to Permit Condition III.10.J.5, to automatically cut-off and/or
42 lockout the dangerous and mixed waste feed to the HLW Vitrification System when the
43 monitored operating conditions deviate from the set-points specified in Permit Table
44 [III.10.J.F](#).

- 1 **III.10.J.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as
2 approved/modified pursuant to Permit Condition III.10.J.5, to automatically cut-off and/or
3 lock-out the dangerous and mixed waste feed to the HLW Vitrification System when all
4 instruments specified on Permit Table [III.10.H.F](#) for measuring the monitored parameters
5 fails or exceeds its span value.
- 6 **III.10.J.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as
7 approved/modified pursuant to Permit Condition III.10.J.5, to automatically cut-off and/or
8 lock out the dangerous and/or mixed waste feed to the HLW Vitrification System when any
9 portion of the HLW Vitrification System is bypassed. The terms “bypassed” and “bypass
10 event” as used in Permit Sections III.10.J and III.10.K will mean if any portion of the HLW
11 Vitrification System is bypassed so that gases are not treated as during the Demonstration
12 Test.
- 13 **III.10.J.1.c.v** In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.J.F](#), as
14 approved/modified pursuant to Permit Condition III.10.J.5, the Permittees will immediately,
15 manually cutoff the dangerous and mixed waste feed to the HLW Vitrification System. The
16 Permittees will not restart the dangerous and/or mixed waste feed until the problem causing
17 the malfunction has been identified and corrected.
- 18 **III.10.J.1.c.vi** The Permittees will manually cutoff the dangerous and mixed waste feed to the HLW
19 Vitrification System when the operating conditions deviate from the limits specified in
20 Permit Condition III.10.J.1.c.i, unless the deviation automatically activates the waste feed
21 cut-off sequence specified in Permit Conditions III.10.J.1.c.ii, III.10.J.1.c.iii, and/or
22 III.10.J.1.c.iv.
- 23 **III.10.J.1.c.vii** If greater than thirty (30) dangerous and mixed waste feed cut-offs, combined, to the HLW
24 Vitrification System occur due to deviations from Permit Table [III.10.J.F](#), as
25 approved/modified pursuant to Permit Condition III.10.J.5, within a sixty (60) day period,
26 the Permittees will submit a written report to Ecology within five (5) calendar days of the
27 thirty-first exceedence including the information specified below. These dangerous and
28 mixed waste feed cut-offs to the HLW Vitrification System, whether automatically or
29 manually activated, are counted if the specified set-points are deviated from while dangerous
30 waste, mixed waste, and waste residues continue to be processed in the HLW Vitrification
31 System. A cascade event is counted at a frequency of one (1) towards the first waste feed
32 cut-off parameter, specified on Permit Table [III.10.J.F](#), from which the set-point is deviated:
33 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.J.F](#);
34 B. The magnitude, dates, and duration of the deviations;
35 C. Results of the investigation of the cause of the deviations; and,
36 D. Corrective measures taken to minimize future occurrences of the deviations.
- 37 **III.10.J.1.c.viii** If any portion of the HLW Vitrification System is bypassed while treating dangerous and/or
38 mixed waste, it will be regarded as non-compliance with the operating conditions specified
39 in Permit Condition III.10.J.1.c and the performance standards specified in Permit Condition
40 III.10.J.1.b. After such a bypass event, the Permittees will perform the following actions:
41 A. Investigate the cause of the bypass event;
42 B. Take appropriate corrective measures to minimize future bypasses;
43 C. Record the investigation findings and corrective measures in the operating record; and

- 1 D. Submit a written report to Ecology within five (5) days of the bypass event documenting
2 the result of the investigation and corrective measures.
- 3 **III.10.J.1.c.ix** The Permittees will control fugitive emissions from the HLW Vitrification System by
4 maintaining the melter under negative pressure.
- 5 **III.10.J.1.c.x** Except during periods of HLW Vitrification System startup and shutdown, compliance with
6 the operating conditions specified in Permit Condition [III.10.J.1.c](#) will be regarded as
7 compliance with the required performance standards identified in Permit Condition
8 III.10.J.1.b. However, evidence that compliance with these operating conditions is
9 insufficient to ensure compliance with the performance standards, will justify modification,
10 revocation, or re-issuance of this Permit, in accordance with Permit Conditions III.10.C.2.e
11 and III.10.C.2.f, or III.10.C.2.g.
- 12 **III.10.J.1.d Inspection Requirements [\[WAC 173-303-680\(3\)\]](#)**
- 13 **III.10.J.1.d.i** The Permittees will inspect the HLW Vitrification System in accordance with the Inspection
14 Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in
15 accordance with Permit Condition III.10.C.5.c.
- 16 **III.10.J.1.d.ii** The inspection data for HLW Vitrification System will be recorded, and the records will be
17 placed in the WTP Unit operating record for the HLW Vitrification System, in accordance
18 with Permit Condition III.10.C.4.
- 19 **III.10.J.1.d.iii** The Permittees will comply with the inspection requirements specified in Operating Unit
20 Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition
21 III.10.J.5.f, and as modified by Permit Conditions III.10.J.1.b.xii, III.10.J.2, III.10.J.3, and
22 III.10.J.4.
- 23 **III.10.J.1.e Monitoring Requirements [\[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), [WAC -173-303-](#)
24 [670\(7\)](#), and [WAC 173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(3\)](#)]**
- 25 **III.10.J.1.e.i** Upon receipt of a written request from Ecology, the Permittees will perform sampling and
26 analysis of the dangerous and mixed waste and exhaust emissions to verify that the operating
27 requirements established in the Permit achieve the performance standards delineated in this
28 Permit.
- 29 **III.10.J.1.e.ii** The Permittees will comply with the monitoring requirements specified in Operating Unit
30 Group 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved
31 pursuant to Permit Conditions III.10.J.5.c, III.10.J.5.d, III.10.J.5.e, and III.10.J.5.f, as
32 modified by Permit Conditions III.10.J.1.b.xii, III.10.J.2, III.10.J.3, and III.10.J.4.
- 33 **III.10.J.1.e.iii** The Permittees will operate, calibrate, and maintain the CO and hydrocarbon CEM specified
34 in this Permit in accordance with Performance Specification 4B and 8A of 40 CFR Part 60,
35 Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and
36 Operating Unit Group 10 Appendix 10.15 of this Permit, as approved pursuant to Permit
37 Condition III.10.J.5.f, and as modified by Permit Conditions III.10.J.1.b.xii, III.10.J.2,
38 III.10.J.3, and III.10.J.4.
- 39 **III.10.J.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit
40 Tables III.10.J.C and F, as approved/modified pursuant to Permit Condition III.10.J.5, in
41 accordance with Operating Unit Group 10, Appendix 10.15 of this Permit, as approved

pursuant to Permit Condition III.10.J.5.f, and as modified by Permit Conditions III.10.J.1.b.xii, III.10.J.2, III.10.J.3, and III.10.J.4.

III.10.J.1.f Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]

III.10.J.1.f.i The Permittees will record and maintain in the WTP Unit operating record for the HLW Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4 and [III.10.C.5](#), as modified by Permit Conditions III.10.J.1.b.xii, III.10.J.2, III.10.J.3, and III.10.J.4.

III.10.J.1.f.ii The Permittees will record in the WTP Unit operating record the date, time, and duration of all AWFCO and/or lockouts, including the triggering parameters, reason for the deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO system function failures, including the corrective measures taken to correct the condition that caused the failure.

III.10.J.1.f.iii The Permittees will submit to Ecology a report semi-annually the first calendar year, and annually thereafter each calendar year within ninety (90) days following the end of the year. The report will include the following information:

- A. Total dangerous and mixed waste feed processing time for the HLW Vitrification System;
- B. Date/Time of all HLW Vitrification System startups and shutdowns;
- C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System shutdowns caused by malfunction of either process or control equipment; and,
- D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed waste feed cut-off due to deviations from Permit Table [III.10.J.F](#), as approved/modified pursuant to Permit Condition III.10.J.5.

III.10.J.1.f.iv The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance Specification Tests conducted in accordance with Permit Condition III.10.J.1.e.iii.

III.10.J.1.g Closure

The Permittees will close the HLW Vitrification System in accordance with Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.J.2 Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]

III.10.J.2.a The shakedown period for the HLW Vitrification System will be conducted in accordance with Permit Condition III.10.J.1, Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f, and as modified in accordance with Permit Conditions III.10.J.1.b.xii, III.10.J.2, and III.10.J.3.

III.10.J.2.b Duration of the Shakedown Period

III.10.J.2.b.i The shakedown period for the HLW Vitrification System will begin with the initial introduction of dangerous waste in the HLW Vitrification System following construction and will end with the start of the demonstration test.

- 1 **III.10.J.2.b.ii** The shakedown period will not exceed the following limits, as defined by hours of operation,
2 when the HLW Vitrification System is processing dangerous waste. The Permittees may
3 petition Ecology for one (1) extension of each shakedown phase for seven hundred and
4 twenty (720) additional operating hours in accordance with permit modification procedures
5 specified in Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f.
- 6 Shakedown Phase 1: 720 hours
7 Shakedown Phase 2: 720 hours
- 8 **III.10.J.2.b.iii** Shakedown Phase 2 will not be commenced until documentation has been submitted to
9 Ecology verifying that the HLW Vitrification System has operated at a minimum of 75% of
10 the shakedown Phase 1 feedrate limit for two (2) separate eight (8) consecutive hour periods
11 with no AWFCOs.
- 12 **III.10.J.2.c Allowable Waste Feed During the Shakedown Period**
- 13 **III.10.J.2.c.i** The Permittees may feed the dangerous waste specified for the HLW Vitrification System on
14 the Part A Forms (Operating Unit Group 10, Addendum A of this Permit), except for those
15 wastes outside the waste acceptance criteria specified in the WAP, Operating Unit Group 10,
16 Addendum B of this Permit, as approved pursuant to Permit Condition III.10.C.3, except
17 Permit Conditions III.10.J.2.c.ii through v also apply.
- 18 **III.10.J.2.c.ii** The Permittees will not feed the following waste to the HLW Vitrification System during
19 Shakedown Phase 1:
20 A. Acutely toxic dangerous waste listed in [WAC 173-303-081\(a\)\(2\)\(a\)\(i\)](#); or,
21 B. Mixed waste.
- 22 **III.10.J.2.c.iii** The Permittees will not feed the following waste to the HLW Vitrification System during
23 Shakedown Phase 2:
24 A. Mixed waste.
- 25 **III.10.J.2.c.iv** The feedrates to the HLW Vitrification System will not exceed the limits in Permit Tables
26 [III.10.J.D](#) and [III.10.J.F](#), as approved/modified pursuant to Permit Condition III.10.J.5.
- 27 **III.10.J.2.c.v** The Permittees will conduct sufficient analysis of the dangerous waste treated in the HLW
28 Vitrification System to verify that the waste feed is within the physical and chemical
29 composition limits specified in this Permit.
- 30 **III.10.J.3 Demonstration Test Period [[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), [WAC 173-303-](#)
31 [670\(7\)](#), and [WAC 173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]**
- 32 **III.10.J.3.a Demonstration Test Period**
- 33 **III.10.J.3.a.i** The Permittees will operate, monitor, and maintain the HLW Vitrification System as
34 specified in Permit Condition III.10.J.1, and Operating Unit Group 10, Appendix 10.15 of
35 this Permit, as approved pursuant to Permit Condition III.10.J.5.f., except as modified in
36 accordance with Permit Conditions III.10.J.1.b.xii and III.10.J.3.
- 37 **III.10.J.3.a.ii** Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit
38 Condition III.10.J.5.f, will be re-submitted to Ecology for approval by the Permittees as a
39 permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f at least one
40 hundred and eighty (180) days prior to the start date of the demonstration test. The RDTP

1 will include applicable EPA promulgated test methods and procedures in effect at the time of
2 the re-submittal and projected commencement and completion dates for the Demonstration
3 Test.

4 **III.10.J.3.a.iii** The Permittees will not commence the demonstration test period until documentation has
5 been submitted to Ecology verifying that the HLW Vitrification System has operated at a
6 minimum of 75% of the demonstration test period feed-rate limit for a minimum of an eight
7 (8) consecutive hours period on two (2) consecutive days.

8 **III.10.J.3.b Performance Standards**

9 The Permittees will demonstrate compliance with the performance standards specified in Permit
10 Condition III.10.J.1.b during the Demonstration Test Period.

11 **III.10.J.3.c Allowable Waste Feed During the Demonstration Test Period**

12 **III.10.J.3.c.i** The Permittees may feed the dangerous waste specified for the HLW Vitrification System in
13 Part A Forms (Operating Unit Group 10, Addendum A of this Permit), except for those
14 waste outside the waste acceptance criteria specified in the WAP, Operating Unit Group 10,
15 Addendum B of this Permit, as approved pursuant to Permit Condition III.10.C.3, except
16 Permit Conditions III.10.J.3.c.ii through iv also apply.

17 **III.10.J.3.c.ii** The Permittees will not feed mixed waste to the HLW Vitrification System.

18 **III.10.J.3.c.iii** The dangerous waste feedrates to the HLW Vitrification System will not exceed the limits in
19 Permit Tables [III.10.J.D](#) and [F](#), as approved/modified pursuant to Permit Condition
20 III.10.J.5.

21 **III.10.J.3.c.iv** The Permittees will conduct sufficient analysis of the dangerous waste treated in the HLW
22 Vitrification System to verify that the dangerous waste is within the physical and chemical
23 composition limits specified in this Permit.

24 **III.10.J.3.d Demonstration Data Submissions and Certifications**

25 **III.10.J.3.d.i** The Permittees will submit to Ecology a complete demonstration test report within one
26 hundred and eighty (180) calendar days of completion of the Demonstration Test including
27 all data collected during the Demonstration Test and updated Permit Tables [III.10.K.D](#),
28 [III.10.K.E](#), and [III.10.K.F](#).

29 **III.10.J.3.d.ii** The Permittees must submit the following information to Ecology prior to receiving
30 Ecology's approval to commence feed of dangerous waste and mixed waste to the HLW
31 Vitrification System:

- 32 A. The Permittees will submit a summary of data collected as required during the
33 Demonstration Test to Ecology upon completion of the Demonstration Test;
- 34 B. A certification that the Demonstration Test has been carried out in accordance with the
35 approved Demonstration Test Plan and approved modifications within thirty (30) days of
36 the completion of the Demonstration Test [WAC 173-303-807(8)];
- 37 C. Calculations and analytical data showing compliance with the performance standards
38 specified in Permit Conditions III.10.J.1.b.i, III.10.J.1.b.iv, III.10.J.1.b.v, III.10.J.1.b.vi, and
39 III.10.J.1.b.vii; and,
- 40 D. Laboratory data QA/QC summary for the information provided in III.10.J.3.d.ii.C.

1 **III.10.J.3.d.iii**

2 After successful completion of the Demonstration Test and receipt of Ecology's approval,
3 the Permittees will be authorized to commence feed of dangerous waste and mixed waste to
4 the HLW Vitrification System for the post-demonstration test period indicated in Permit
5 Tables [III.10.J.D](#) and [F](#), as approved/modified pursuant to Permit Condition III.10.J.5, in
6 compliance with the operating requirements specified in Permit Condition III.10.J.1.c and
within the limitations specified in Permit Condition III.10.C.14.

7 **III.10.J.3.d.iv**

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8 **III.10.J.3.d.v**

9 After successful completion of the Demonstration Test, Permittees submittal of the
10 following to Ecology, and Permittees receipt of Ecology approval of the following in
11 writing, the Permittees will be authorized to feed dangerous waste and mixed waste to the
HLW Vitrification System pursuant to Permit Section III.10.K.

12 A. A complete Demonstration Test Report for the HLW Vitrification System and updated
13 Permit Tables [III.10.K.D](#), [III.10.K.E](#), and [III.10.K.F](#), as approved/modified pursuant to
14 Permit Conditions III.10.J.5 and III.10.C.11.c or III.10.C.11.d, the test report will be
15 certified in accordance with [WAC 173-303-807](#)(8), in accordance with [WAC 173-303-](#)
16 [680](#)(2) and (3).

17 B. A Final Risk Assessment Report completed pursuant to Permit Conditions III.10.C.11.c or
18 III.10.C.11.d.

19 **III.10.J.3.d.vi**

20 If any calculations or testing results show that one or more of the performance standards
21 listed in Permit Condition III.10.J.1.b, with the exception of Permit Condition III.10.J.1.b.x,
22 for the HLW Vitrification System were not met during the Demonstration Test, the
Permittees will perform the following actions:

23 A. Immediately stop dangerous and mixed waste feed to the HLW Vitrification System
24 under the mode of operation that resulted in not meeting the performance standard(s);

25 B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
26 performance standard(s) as specified in Permit Condition I.E.21;

27 C. Investigate the cause of the failure and submit a report of the investigation findings to
28 Ecology within fifteen (15) days of discovery of not meeting the performance
29 standard(s);

30 D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
31 standard(s), documentation supporting a mode of operation where all performance
32 standards listed in Permit Condition III.10.J.1.b, with the exception of Permit Condition
33 III.10.J.1.b.x, for the HLW Vitrification System were met during the demonstration test,
34 if any such mode was demonstrated;

35 E. Based on the information provided to Ecology by the Permittees, pursuant to Permit
36 Conditions III.10.J.3.d.vi.A through D above, and any additional information, Ecology
37 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste
38 feed to the LAW Vitrification System and/or amend the mode of operation the Permittees
39 are allowed to continue operations prior to Ecology approval of a compliance schedule
40 and/or RDTP, pursuant to Permit Conditions III.10.J.3.d.vi.F and G;

41 F. If the performance standard listed in Permit Condition III.10.J.1.b.i was not met during
42 the Demonstration Test, the Permittees will submit within one hundred and twenty (120)
43 days of discovery of not meeting the performance standard, a RDTP (if appropriate) and

1 a compliance schedule for Ecology approval to address this deficiency. If a RDTP is
2 submitted, it will be accompanied by a request for approval to retest as a permit
3 modification pursuant to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f. The revised
4 Demonstration Test Plan (if submitted) must include substantive changes to prevent
5 failure from reoccurring; and,

6 G. If any of the performance standards listed in Permit Condition III.10.J.1.b, with the
7 exception of Permit Conditions III.10.J.1.b.i or III.10.J.1.b.x, were not met during the
8 Demonstration Test, the Permittees will submit to Ecology within one hundred and
9 twenty (120) days of discovery of not meeting the performance standard(s), a revised
10 Demonstration Test Plan requesting approval to retest as a permit modification pursuant
11 to Permit Conditions [III.10.C.2.e](#) and III.10.C.2.f. The revised Demonstration Test Plan
12 must include substantive changes to prevent failure from reoccurring;

13 **III.10.J.3.d.vii**

If any calculations or testing results show that any emission rate for any constituent listed in
14 Permit Table [III.10.J.E](#), as approved pursuant to Permit Condition [III.10.C.11.b](#), is exceeded
15 for HLW Vitrification System during the Demonstration Test, the Permittees will perform
16 the following actions:

- 17 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
18 emission rate(s) as specified in Permit Condition I.E.21;
- 19 B. Submit to Ecology additional risk information to indicate that the increased emissions
20 impact is offset by decreased emission impact from one or more constituents expected to
21 be emitted at the same time, and/or investigate the cause and impact of the exceedence of
22 the emission rate(s) and submit a report of the investigation findings to Ecology within
23 fifteen (15) days of the discovery of exceeding the emission rate(s); and,
- 24 C. Based on the notification and any additional information, Ecology may provide, in
25 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
26 HLW Vitrification System and/or to submit a RDTP as a permit modification pursuant to
27 Permit Conditions III.10.C.2.e and III.10.C.2.f, or III.10.C.2.g. The RDTP must include
28 substantive changes to prevent failure from reoccurring.

29 **III.10.J.4 Post-Demonstration Test Period [[WAC 173-303-670\(5\)](#), [WAC 173-303-670\(6\)](#), and [WAC](#)**
30 **[173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]**

31 **III.10.J.4.a** The Permittees will operate, monitor, and maintain the HLW Vitrification System as specified in
32 Permit Condition III.10.J.1 and Operating Unit Group 10, Appendix 10.15 of this Permit, as
33 approved pursuant to Permit Condition III.10.J.5, except as modified in accordance with Permit
34 Conditions III.10.J.1.b.xii, III.10.J.3, and III.10.J.4.

35 **III.10.J.4.b Allowable Waste Feed during the Post-Demonstration Test Period**

36 **III.10.J.4.b.i** The Permittees may feed the dangerous and/or mixed waste specified for the HLW
37 Vitrification System on the Part A Forms (Operating Unit Group 10, Addendum A of this
38 Permit), except for those waste outside the waste acceptance criteria specified in the WAP,
39 Operating Unit Group 10, Addendum B of this Permit, as approved pursuant to Permit
40 Condition III.10.C.3, and except Permit Conditions III.10.J.4.b.ii and III.10.J.4.b.iii also
41 apply.

42 **III.10.J.4.b.ii** The dangerous waste and mixed waste feed rates to the HLW Vitrification System will not
43 exceed the limits in Permit Tables [III.10.J.D](#) and [F](#), as approved/modified pursuant to Permit
44 Condition III.10.J.5, or in Permit Condition III.10.J.3.

- 1 **III.10.J.4.b.iii** The Permittees will conduct sufficient analysis of the dangerous waste and mixed waste
2 treated in HLW Vitrification System to verify that the waste feed is within the physical and
3 chemical composition limits specified in this Permit.
- 4 **III.10.J.5 Compliance Schedules**
- 5 **III.10.J.5.a** All information identified for submittal to Ecology in III.10.J.5.a. through f. of this compliance
6 schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as
7 modified in accordance with Permit Condition III.10.J.1.a.iii. [[WAC 173-303-806\(4\)](#)].
- 8 **III.10.J.5.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to
9 construction of each secondary containment and leak detection system for the HLW Vitrification
10 System (per level) as identified in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), engineering information as
11 specified below, for incorporation into Operating Unit Group 10, Appendices 10.2, 10.4, 10.5, 10.7,
12 10.8, 10.9, 10.11, and 10.12 of this Permit. At a minimum, engineering information specified below
13 will show the following as described in [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#)
14 (the information specified below will include dimensioned engineering drawings and information on
15 sumps and floor drains):
- 16 **III.10.J.5.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system)
17 will include review of design drawings, calculations, and other information on which the
18 certification report is based and will include, but not limited to, review of such information
19 described below. Information (drawings, specifications, etc.) already included in Operating
20 Unit Group 10, Appendix 10.0 of this Permit, may be included in the report by reference and
21 should include drawing and document numbers. IQRPE Reports will be consistent with the
22 information separately provided in III.10.J.5.b. ii. through ix below [[WAC 173-303-](#)
23 [640\(3\)\(a\)](#)], in accordance with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 24 **III.10.J.5.b.ii** Design drawings (GA Drawings, plan and cross sections) and specifications for the
25 foundation, secondary containment including liner installation details, and leak detection
26 methodology. These items should show the dimensions, volume calculations, and location
27 of the secondary containment system, and should include items such as floor/pipe slopes to
28 sumps, tanks, floor drains [[WAC 173-303-640\(4\)\(b\)](#) through (f) and [WAC 173-303-](#)
29 [640\(3\)\(a\)](#)], in accordance with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 30 **III.10.J.5.b.iii** The Permittees will provide the design criteria (references to codes and standards, load
31 definitions, and load combinations, materials of construction, and analysis/design
32 methodology) and typical design details for the support of the secondary containment
33 system. This information will demonstrate the foundation will be capable of providing
34 support to the secondary containment system, resistance to pressure gradients above and
35 below the system, and capable of preventing failure due to settlement, compression, or uplift
36 [[WAC 173-303-640\(4\)\(c\)\(ii\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and [WAC 173-303-](#)
37 [806\(4\)\(i\)\(i\)\(B\)](#)];
- 38 **III.10.J.5.b.iv** A description of materials and equipment used to provide corrosion protection for external
39 metal components in contact with soil, including factors affecting the potential for corrosion
40 [[WAC 173-303-640\(3\)\(a\)\(iii\)\(B\)](#)], in accordance with [WAC 173-303-680](#) and [WAC 173-](#)
41 [303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)];

- 1 **III.10.J.5.b.v** Secondary containment/foundation, and leak detection system, materials selection
2 documentation (including, but not limited to, concrete coatings and water stops, and liner
3 materials), as applicable [[WAC 173-303-806\(4\)\(i\)\(A\)](#) through (B)];
- 4 **III.10.J.5.b.vi** Detailed description of how the secondary containment for the HLW Vitrification System
5 will be installed in compliance with [WAC 173-303-640\(3\)\(c\)](#), in accordance with [WAC 173-](#)
6 [303-680](#) and [WAC 173-303-806\(4\)\(i\)\(A\)](#) through (B);
- 7 **III.10.J.5.b.vii** Submit Permit Tables [III.10.J.B](#) and [III.10.K.B](#) completed to provide for all secondary
8 containment sumps and floor drains the information, as specified in each column heading
9 consistent with information to be provided in [i.](#) through [vi.](#), above;
- 10 **III.10.J.5.b.viii** Documentation that secondary containment and leak detection systems will not accumulate
11 hydrogen gas levels above the LEL for incorporation into the Administrative Record [[WAC](#)
12 [173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(A\)](#), and [WAC 173-303-806\(4\)\(v\)](#)]; and,
- 13 **III.10.J.5.b.ix** A detailed description of how HLW Vitrification System design provides access for
14 conducting future HLW Vitrification System integrity assessments [[WAC 173-303-](#)
15 [640\(3\)\(b\)](#) and [WAC 173-303-806\(4\)\(i\)\(B\)](#)].
- 16 **III.10.J.5.c** The Permittees will submit to Ecology pursuant to Permit Condition III.10.C.9.f, prior to installation
17 of each sub-system as identified in Permit Table [III.10.J.A](#), engineering information as specified
18 below, for incorporation into Operating Unit Group 10, Appendices 10.1 through 10.14 and 10.17 of
19 this Permit. At a minimum, engineering information specified below will show the following, as
20 required pursuant to [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#) (the information
21 specified below will include dimensioned engineering drawings):
- 22 **III.10.J.5.c.i** IQRPE Reports (specific to sub-system) will include review of design drawings,
23 calculations, and other information on which the certification report is based and will include
24 as applicable, but not limited to, review of such information described below. Information
25 (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 10.0
26 of this Permit, may be included in the report by reference and should include drawing and
27 document numbers. The IQRPE Reports will be consistent with the information separately
28 provided in ii through xii below and the IQRPE Report specified in Permit Condition
29 III.10.J.5.b [[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#) and [WAC](#)
30 [173-303-806\(4\)\(i\)\(i\)](#)];
- 31 **III.10.J.5.c.ii** Design drawings [GA Drawings in plan and cross section, PFDs, P&IDs, (including pressure
32 control systems), Mechanical Drawings, and specifications, and other information specific to
33 subsystems (to show location and physical attributes of each subsystem specific to
34 miscellaneous units)] [[WAC 173-303-640\(3\)\(a\)](#), in accordance with [WAC 173-303-680\(2\)](#)
35 and [WAC 173-303-806\(4\)\(i\)\(i\)](#)];
- 36 **III.10.J.5.c.iii** Sub-system design criteria (references to codes and standards, load definitions, and load
37 combinations, materials of construction, and analysis/design methodology) and typical
38 design details to support the sub-systems. Structural support calculations specific to off-
39 specification, non-standard, and field-fabricated subsystems will be submitted for
40 incorporation into the Administrative Record. Documentation will include, but not be
41 limited to, supporting specifications (test data, treatment effectiveness report, etc.),
42 supporting projected operational capability (e.g., WESP projected removal efficiency for
43 individual metals, halogens, particulates, etc.), and compliance with performance standards

- 1 specified in Permit Condition III.10.J.1.b [[WAC 173-303-640](#)(3)(a), in accordance with
2 [WAC 173-303-680](#)(2) and [WAC 173-303-806](#)(4)(i)(B)];
- 3 **III.10.J.5.c.iv** A description of materials and equipment used to provide corrosion protection for external
4 metal components in contact with water, including factors affecting the potential for
5 corrosion [[WAC 173-303-640](#)(3)(a)(iii)(B), in accordance with [WAC 173-303-680](#)(2) and
6 [WAC 173-303-806](#)(4)(i)(A) through (B)];
- 7 **III.10.J.5.c.v** Sub-system materials selection documentation (e.g., physical and chemical tolerances)
8 [[WAC 173-303-640](#)(3)(a), in accordance with [WAC 173-303-680](#)(2) and [WAC 173-303-](#)
9 [806](#)(4)(i)(A)];
- 10 **III.10.J.5.c.vi** Sub-system vendor information (including, but not limited to, required performance
11 warranties, as available), consistent with information submitted under ii, above, will be
12 submitted for incorporation into the Administrative Record [[WAC 173-303-640](#)(3)(a), in
13 accordance with [WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(A) through (B), and
14 [WAC 173-303-806](#)(4)(i)(v)];
- 15 **III.10.J.5.c.vii** System descriptions related to sub-system units will be submitted for incorporation into the
16 Administrative Record [[WAC 173-303-680](#), [WAC 173-303-806](#)(4)(i)(A) through (B), and
17 [WAC 173-303-806](#)(4)(i)(v)];
- 18 **III.10.J.5.c.viii** Mass and energy balance for normal projected operating conditions used in developing the
19 P&IDs and PFDs, including assumptions and formulas used to complete the mass and
20 energy balance, so that they can be independently verified for incorporation into the
21 Administrative Record [[WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(B), and [WAC](#)
22 [173-303-806](#)(4)(i)(v)];
- 23 **III.10.J.5.c.ix** Detailed description of all potential HLW Vitrification System bypass events including:
24 A report which includes an analysis of credible potential bypass events and
25 recommendations for prevention/minimization of the potential, impact, and frequency of the
26 bypass event to include at a minimum:
27 1. Operating procedures;
28 2. Maintenance procedures;
29 3. Redundant equipment;
30 4. Redundant instrumentation;
31 5. Alternate equipment; and,
32 6. Alternate materials of construction;
- 33 **III.10.J.5.c.x** A detailed description of how the sub-systems will be installed in compliance with [WAC](#)
34 [173-303-640](#)(3)(b), (c), (d), and (e), in accordance with [WAC 173-303-680](#) and [WAC 173-](#)
35 [303-806](#)(4)(i)(B);
- 36 **III.10.J.5.c.xi** Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic
37 (upon inhalation) EHW, for incorporation into the Administrative Record [[WAC 173-303-](#)
38 [640](#)(5)(e), in accordance with [WAC 173-303-680](#), (2), and [WAC 173-303-806](#)(4)(i)(B)];
39 and,

- 1 **III.10.J.5.c.xii** Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases
2 levels above the LEL for incorporation into the Administrative Record [[WAC 173-303-680](#),
3 [WAC 173-303-806](#)(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].
- 4 **III.10.J.5.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation
5 of equipment for each sub-system as identified in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), not
6 addressed in Permit Conditions III.10.J.5.b or III.10.J.5.c, engineering information as specified
7 below, for incorporation into Operating Unit Group 10, Appendices 10.1 through 10.14 of this
8 Permit. At a minimum, engineering information specified below will show the following as required
9 pursuant to in [WAC 173-303-640](#), in accordance with [WAC 173-303-680](#) (the information specified
10 below will include dimensioned engineering drawings):
- 11 **III.10.J.5.d.i** IQRPE Reports (specific to sub-system equipment) will include a review of design drawings,
12 calculations, and other information as applicable on which the certification report is based.
13 The reports will include, but not be limited to, review of such information described below.
14 Information (drawings, specifications, etc.) already included in Operating Unit Group 10,
15 Appendix 10.0 of this Permit, may be included in the report by reference and should include
16 drawing and document numbers. The IQRPE Reports will be consistent with the
17 information provided separately in ii through xiii below and the IQRPE Reports specified in
18 Permit Conditions III.10.J.5.b and III.10.J.5.c [[WAC 173-303-640](#)(3)(a), in accordance with
19 [WAC 173-303-680](#)(2) and [WAC 173-303-806](#)(4)(i)(i)(A) through (B)];
- 20 **III.10.J.5.d.ii** Design drawings [PFD, P&IDs (including pressure control systems), and specifications, and
21 other information specific to equipment (these drawings should include all equipment such
22 as pipes, valves, fittings, pumps, instruments, etc.)] [[WAC 173-303-640](#)(3)(a), in accordance
23 with [WAC 173-303-680](#)(2) and [WAC 173-303-806](#)(4)(i)(i)(A) through (B)];
- 24 **III.10.J.5.d.iii** Sub-system equipment design criteria (references to codes and standards, load definitions
25 and load combinations, materials of construction, and analysis/design methodology) and
26 typical design details for the support of the sub-system equipment. [[WAC 173-303-640](#)(3)(a)
27 and [WAC 173-303-640](#)(3)(f), in accordance with [WAC 173-303-680](#) and [WAC 173-303-](#)
28 [806](#)(4)(i)(i)(B)];
- 29 **III.10.J.5.d.iv** A description of materials and equipment used to provide corrosion protection for external
30 metal components in contact with soil and water, including factors affecting the potential for
31 corrosion [[WAC 173-303-640](#)(3)(a)(iii)(B), in accordance with [WAC 173-303-680](#)(2) and
32 [WAC 173-303-806](#)(4)(i)(i)(A)];
- 33 **III.10.J.5.d.v** Materials selection documentation for equipment for each sub-system (e.g., physical and
34 chemical tolerances) [[WAC 173-303-640](#)(3)(a), in accordance with [WAC 173-303-680](#)(2)
35 and [WAC 173-303-806](#)(4)(i)(i)(A)];
- 36 **III.10.J.5.d.vi** Vendor information (including, but not limited to, required performance warranties, as
37 available), consistent with information submitted under III.10.J.5.d.ii above, for sub-system
38 equipment will be submitted for incorporation into the Administrative Record [[WAC 173-](#)
39 [303-640](#)(3)(a), in accordance with [WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(A)
40 through (B), and [WAC 173-303-806](#)(4)(i)(iv)];
- 41 **III.10.J.5.d.vii** Sub-system, sub-system equipment, and leak detection system instrument control logic
42 narrative description (e.g., software functional specifications, descriptions of fail-safe

- 1 conditions, etc.) [[WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(B), and [WAC 173-303-](#)
2 [806](#)(4)(i)(v)];
- 3 **III.10.J.5.d.viii** System description related to sub-system equipment, and system descriptions related to leak
4 detection systems, for incorporation into the Administrative Record [[WAC 173-303-680](#),
5 [WAC 173-303-806](#)(4)(i)(i)(A) through (B), and [WAC 173-303-806](#)(4)(i)(v)];
- 6 **III.10.J.5.d.ix** A detailed description of how the sub-system equipment will be installed and tested [[WAC](#)
7 [173-303-640](#)(3)(c) through (e) and [WAC 173-303-640](#)(4)(b) and (c), in accordance with
8 [WAC 173-303-680](#) and [WAC 173-303-806](#)(4)(i)(i)(B)];
- 9 **III.10.J.5.d.x** For process monitoring, control, and leak detection system instrumentation for the HLW
10 Vitrification System as identified in Permit Tables [III.10.J.C](#) and [III.10.J.F](#), a detailed
11 description of how the process monitoring, control, and leak detection system
12 instrumentation will be installed and tested [[WAC 173-303-640](#)(3)(c) through (e), [WAC](#)
13 [173-303-640](#)(4)(b) and (c), [WAC 173-303-806](#)(4)(c)(vi), and [WAC 173-303-](#)
14 [806](#)(4)(i)(i)(B)];
- 15 **III.10.J.5.d.xi** Mass and energy balance for projected normal operating conditions used in developing the
16 P&IDs and PFDs, including assumptions and formulas used to complete the mass and
17 energy balance, so that they can be independently verified, for incorporation into the
18 Administrative Record [[WAC 173-303-680](#)(2), [WAC 173-303-806](#)(4)(i)(i)(B), and [WAC](#)
19 [173-303-806](#)(4)(i)(v)];
- 20 **III.10.J.5.d.xii** Documentation that sub-systems equipment are designed to prevent the accumulation of
21 hydrogen gas levels above the LEL into the Administrative Record [[WAC 173-303-680](#),
22 [WAC 173-303-806](#)(4)(i)(i)(A), and [WAC 173-303-806](#)(4)(i)(v)] [[WAC 173-303-](#)
23 [815](#)(2)(b)(ii)]; and,
- 24 **III.10.J.5.d.xiii** Leak Detection system documentation (e.g. vendor information etc.) consistent with
25 information submitted under Permit Condition III.10.J.5.c.ii and Permit Conditions
26 III.10.J.5.d.ii, vii, viii, and x above, will be submitted for incorporation into the
27 Administrative Record.
- 28 **III.10.J.5.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit
29 to Ecology, pursuant to Permit Condition [III.10.C.9.f](#), the following as specified below for
30 incorporation into Operating Unit Group 10, Appendix 10.18 of this Permit, except Permit Condition
31 [III.10.J.5.e.i](#), which will be incorporated into Operating Unit Group 10, Addendum E of this Permit.
32 All information provided under this permit condition must be consistent with information provided
33 pursuant to Permit Conditions III.10.J.5.b, c, d, e, and f, III.10.C.3.e.v, and III.10.C.11.b, as
34 approved by Ecology:
- 35 **III.10.J.5.e.i** Integrity assessment program and schedule for the HLW Vitrification System will address
36 the conducting of periodic integrity assessments on the HLW Vitrification System over the
37 life of the system, as specified in Permit Condition III.10.J.5.b.ix and as specified in [WAC](#)
38 [173-303-640](#)(3)(b), in accordance with [WAC 173-303-680](#), and descriptions of procedures
39 for addressing problems detected during integrity assessments. The schedule must be based
40 on past integrity assessments, age of the system, materials of construction, characteristics of
41 the waste, and any other relevant factors [[WAC 173-303-640](#)(3)(b), in accordance with
42 [WAC 173-303-680](#) and [WAC 173-303-806](#)(4)(i)(i)(B)];

- 1 **III.10.J.5.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is operated so that
2 it will detect the failure of either the primary or secondary containment structure or the
3 presence of any release of dangerous and/or mixed waste or accumulated liquid in the
4 secondary containment system within twenty-four (24) hours [[WAC 173-303-640\(4\)\(c\)\(iii\)](#)].
5 Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined
6 as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria
7 must be approved by Ecology in accordance with [WAC 173-303-680](#), [WAC 173-303-](#)
8 [640\(4\)\(c\)\(iii\)](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(b\)](#);
- 9 **III.10.J.5.e.iii** Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and
10 accumulated precipitation liquids can be removed from the secondary containment system
11 within twenty-four (24) hours [[WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)];
- 12 **III.10.J.5.e.iv** Descriptions of operational procedures demonstrating appropriate controls and practices are
13 in place to prevent spills and overflows from the HLW Vitrification System or containment
14 systems in compliance with [WAC 173-303-640\(5\)\(b\)\(i\)](#) through (iii), in accordance with
15 [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#);
- 16 **III.10.J.5.e.v** Description of procedures for investigation and repair of the HLW Vitrification System
17 [[WAC 173-303-640\(6\)](#) and [WAC 173-303-640\(7\)\(e\)](#) and (f), in accordance with [WAC 173-](#)
18 [303-680](#), [WAC 173-303-320](#), [WAC 173-303-806\(4\)\(ia\)\(iv\)](#), and [WAC 173-303-](#)
19 [806\(4\)\(a\)\(ii\)\(B\)](#)];
- 20 **III.10.J.5.e.vi** Updated Addendum C, Narrative Description, Tables and Figures as identified in Permit
21 Tables [III.10.J.A](#) and [III.10.J.B](#), as modified pursuant to Permit Condition [III.10.H.5.e.x](#), and
22 updated to identify routinely non-accessible LAW Vitrification sub-systems.
- 23 **III.10.J.5.e.vii** Description of procedures for management of ignitable and reactive, and incompatible
24 dangerous and/or mixed waste as specified in accordance with [WAC 173-303-640\(9\)](#) and
25 (10), in accordance with [WAC 173-303-680](#) and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#).
- 26 **III.10.J.5.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated
27 throughout the HLW Vitrification System, pursuant to [WAC 173-303-380](#).
- 28 **III.10.J.5.e.ix** Permit Table [III.10.J.C](#) and [III.10.K.C](#) will be revised and/or completed for HLW
29 Vitrification System process and leak detection system monitors and instruments (to include,
30 but not be limited to: instruments and monitors measuring and/or controlling flow, pressure,
31 temperature, density, pH, level, humidity, and emissions) to provide the information as
32 specified in each column heading. Process and leak detection system monitors and
33 instruments for critical systems, as specified in Operating Unit Group 10, Appendix 2.0 and
34 as updated pursuant to Permit Condition III.10.C.9.b and for operating parameters as
35 required to comply with Permit Condition III.10.C.3.e.iii, will be addressed. Process
36 monitors and instruments for non-waste management operations (e.g., utilities, raw chemical
37 storage, non-contact cooling waters, etc.) are excluded from this permit condition [[WAC](#)
38 [173-303-680](#), [WAC 173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B), and [WAC 173-303-806\(4\)\(i\)\(v\)](#)];
- 39 **III.10.J.5.e.x** Permit Tables [III.10.J.A](#) and [III.10.K.A](#) amended as follows [[WAC 173-303-680](#) and [WAC](#)
40 [173-303-806\(4\)\(i\)\(i\)\(A\)](#) through (B)]:
- 41 A. Under column 1, update and complete list of dangerous and mixed waste HLW
42 Vitrification System sub-systems, including plant items that comprise each system (listed
43 by item number);

- 1 B. Under column 2, update and complete system designations;
- 2 C. Under column 3, replace the 'Reserved' with Operating Unit Group 10, Appendix 10.0
- 3 sub-sections (e.g., 10.1, 10.2, etc.) designated in Permit Conditions III.10.J.5.b, c, and d
- 4 specific to HLW Vitrification System sub-system, as listed in column 1; and,
- 5 D. Under column 4, update and complete list of narrative description, tables, and figures.

6 **III.10.J.5.f**

7 One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the
8 WTP Unit, the Permittees will submit for review and receive approval for incorporation into
9 Operating Unit Group 10, Appendix 10.15 of this Permit, a Demonstration Test Plan for the HLW
10 Vitrification System to demonstrate that the HLW Vitrification Systems meets the performance
11 standards specified in Permit Condition III.10.J.1.b. In order to incorporate the Demonstration Test
12 Plan for the HLW Vitrification System into Operating Unit Group 10, Appendix 10.15, Permit
13 Condition III.10.C.2.g process will be followed. The Demonstration Test Plan will include, but not
14 be limited to, the following information. The Demonstration Test Plan will also be consistent with
15 the information provided pursuant to Permit Conditions III.10.J.5.b, c, d, and e, III.10.C.3.e.v and
16 III.10.C.11.b, as approved by Ecology and consistent with the schedule described in Operating Unit
17 Group 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition
18 III.10.J.5.f.xvi, in addition to being incorporated into Operating Unit Group 10, Appendix 10.15, will
19 be incorporated by reference in Operating Unit Group 10, Addendum E of this Permit.

20 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan: "Guidance*
21 *on Setting Permit Conditions and Reporting Trial Burn Results Volume II of the Hazardous Waste*
22 *Incineration Guidance Series", and EPA/625/6-89/019 and Risk Burn Guidance For Hazardous*
23 *Waste Combustion Facilities", EPA-R-01-001, July 2001, [WAC 173-303-807](#)(2), [WAC 173-303-](#)*
24 *[670](#)(5), [WAC-173-303-670](#)(6), 40 CFR §63.1207(f)(2), 40 CFR §63.1209 and Appendix to 40 CFR*
25 *Part 63 EEE.*

26 *(2) Cross-referencing to the information provided pursuant to permit Conditions III.H.5.b, c, d, e, and*
27 *III.10.C.3.e.v, as approved by Ecology, that are redundant to elements of the Demonstration Test*
28 *Plan for the HLW Vitrification System is acceptable.*

29 **III.10.J.5.f.i**

30 Analysis of each feed-stream to be fed during the demonstration test, including dangerous
31 waste, glass formers and reductants, process streams (e.g., control air, process air, steam,
32 sparge bubbler air, air in-leakage from melter cave, and gases from HLW Vitrification
33 Vessel Ventilation System, process water, etc.) that includes:

- 34 A. Levels of ash, levels of metals, total chlorine (organic and inorganic), other halogens and
35 radionuclide surrogates;
- 36 B. Description of the physical form of the feedstreams;
- 37 C. An identification and quantification of organics that are present in the feedstream,
38 including constituents proposed for DRE demonstration;

39 A comparison of the proposed demonstration test feed streams to the mixed waste feed
40 envelopes to be processed in the melter must be provided that documents that the proposed
41 demonstration test feed streams will serve as worst case surrogates for organic destruction,
42 formation of products of incomplete oxidation, and metals, total chlorine (organic and
43 inorganic), other halogens, particulate formation, and radionuclides;

44 **III.10.J.5.f.ii**

45 Specification of trial PODCs for which destruction and removal efficiencies are proposed to
46 be calculated during the demonstration test and for inclusion in Permit Conditions
47 III.10.J.1.b.i and III.10.K.1.b.i. These trial PODCs will be specified based on destructibility,

1 concentration or mass in the waste and the dangerous waste, constituents or constituents in
2 [WAC 173-303-9905](#);

3 **III.10.J.5.f.iii**

4 A description of the blending procedures, prior to introducing the feedstreams into the
5 melter, including analysis of the materials prior to blending, and blending ratios;

6 **III.10.J.5.f.iv**

7 A description of how the surrogate feeds are to be introduced for the demonstration. This
8 description should clearly identify the differences and justify how any of differences would
9 impact the surrogate feed introduction as representative of how mixed waste feeds will be
10 introduced;

11 **III.10.J.5.f.v**

12 A detailed engineering description of the HLW Vitrification System, including:

- 13 A. Manufacturer's name and model number for each sub-system;
- 14 B. Design capacity of each sub-system including documentation (engineering calculations,
15 manufacturer/vendor specifications, operating data, etc.) supporting projected operational
16 efficiencies (e.g., WESP projected removal efficiency for individual metals, halogens,
17 particulates, etc.) and compliance with performance standards specified in Permit
18 Condition III.10.J.1.b;
- 19 C. Detailed scaled engineering drawings, including PFDs, P&IDs, Vessel Drawings (plan,
20 and elevation with cross sections) and GA Drawings;
- 21 D. Process Engineering Descriptions;
- 22 E. Mass and energy balances for each projected operating condition and each demonstration
23 test condition, including assumptions and formulas used to complete mass and energy
24 balances so that they can be independently verified for incorporation into the
25 Administrative Record;
- 26 F. Engineering Specifications/data sheets (materials of construction, physical and chemical
27 tolerances of equipment, equipment performance warranties, and fan curves);
- 28 G. Detailed Description of AWFCO System addressing critical operating parameters for all
29 performance standards specified in Permit Condition III.10.J.1.b;
- 30 H. Documentation to support compliance with performance standards specified in Permit
31 Condition III.10.J.1.b, including engineering calculations, test data, and
32 manufacturer/vendor's warranties, etc;
- 33 I. Detailed description of the design, operation and maintenance practices for air pollution
34 control system;
- 35 J. Detailed description of the design, operation, and maintenance practices of any stack gas
36 monitoring and pollution control monitoring system; and,
- 37 K. Documentation based on current WTP Unit design either confirming the Permittees'
38 demonstration that it is not technically appropriate to correct standards listed in Permit
39 Conditions III.J.1.b.ii through III.J.1.b.ix to seven percent (7%) oxygen, or a request,
40 pursuant to Permit Conditions III.10.C.9.e and III.10.C.9.f, to update Permit Conditions
41 III.J.1.b.ii through III.J.1.b.ix, III.K.b.ii through III.K.b.ix, III.K.e.iii., and III.J.1.e.iii, Permit
42 Tables [III.10.J.C](#), [III.10.J.F](#), [III.10.K.C.](#), [III.10.K.F](#) and Operating Unit Group 10,
43 Appendix 10.0 to reflect the addition of an oxygen monitor and the correction of the
standards to seven percent (7%) oxygen.

44 **III.10.J.5.f.vi**

45 Detailed description of sampling and monitoring procedures including sampling and
46 monitoring locations in the system, the equipment to be used, sampling and monitoring

1 frequency, and planned analytical procedures for sample analysis including, but not limited
2 to:

- 3 A. A short summary narrative description of each stack sample method should be included
4 within the main body of the demonstration test plan, which references an appendix to the
5 plan that would include for each sampling train: (1) detailed sample method procedures,
6 (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4)
7 detailed analytical method procedures, and (5) sampling preparation and analysis flow
8 sheet. The detailed procedures should clearly flag where the method has provided
9 decision points (e.g., choices of equipment materials of construction, choices of clean-up
10 procedures or whether additional clean-up procedures will be incorporated, whether
11 pretest surveys or laboratory validation work will be performed, enhancements to train to
12 accommodate high moisture content in stack gas, etc.) and what is being proposed along
13 with the basis for the decision; and,
- 14 B. A short summary narrative description of the feed and residue sampling methods should
15 be included within the main body of the demonstration test plan, which references an
16 appendix that would include for each sample type: (1) detailed sample method
17 procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical
18 method procedures. The detailed procedures should clearly flag where the method has
19 provided decision points (e.g., choices of equipment materials of construction, choices of
20 clean-up procedures or whether additional clean-up procedures will be incorporated,
21 whether pretest surveys or laboratory validation work will be performed, etc.) and what is
22 being proposed along with the basis for the decision.

- 1 **III.10.J.5.f.vii** A detailed test schedule for each condition for which the demonstration test is planned,
2 including projected date(s), duration, quantity of dangerous waste to be fed, and other
3 relevant factors;
- 4 **III.10.J.5.f.viii** A detailed test protocol including, for each test condition, the ranges of feed-rate for each
5 feed system, and all other relevant parameters that may affect the ability of the HLW
6 Vitrification System to meet performance standards specified in Permit Condition
7 [III.10.J.1.b](#);
- 8 **III.10.J.5.f.ix** A detailed description of planned operating conditions for each demonstration test condition,
9 including operating conditions for shakedown, demonstration test, post-demonstration test
10 and normal operations. This information will also include submittal of Permit Tables
11 [III.10.J.D](#), [III.10.J.F](#), [III.10.K.D](#), and [III.10.K.F](#) completed with the information as specified
12 in each column heading for each HLW Vitrification System waste feed cut-off parameter
13 and submittal of supporting documentation for Permit Tables [III.10.J.D](#), [III.10.J.F](#),
14 [III.10.K.D](#), and [III.10.K.F](#) set-point values;
- 15 **III.10.J.5.f.x** The test conditions proposed must demonstrate meeting the performance standards specified
16 in Permit Condition III.10.J.1.b with the simultaneous operation of the melter at capacity and
17 input from the HLW Vitrification Vessel Ventilation System at capacity to simulate
18 maximum loading to the HLW Vitrification System off-gas treatment system and to
19 establish the corresponding operating parameter ranges;
- 20 **III.10.J.5.f.xi** A detailed description of procedures for start-up and shutdown of waste feed and controlling
21 emissions in the event of an equipment malfunction, including off-normal and emergency
22 shutdown procedures;
- 23 **III.10.J.5.f.xii** A calculation of waste residence time;
- 24 **III.10.J.5.f.xiii** Any request to extrapolate metal feedrate limits from Demonstration Test levels must
25 include:
- 26 A. A description of the extrapolation methodology and rationale for how the approach
27 ensures compliance with the performance standards, as specified in Permit Condition
28 [III.10.J.1.b](#).
- 29 B. Documentation of the historical range of normal metal feedrates for each feed stream;
30 and,
- 31 C. Documentation that the level of spiking recommended during the demonstration test will
32 mask sampling and analysis imprecision and inaccuracy to the extent that extrapolation of
33 feedrates and emission rates from the Demonstration Test data will be as accurate and
34 precise as if full spiking were used;

- 1 **III.10.J.5.f.xiv** Documentation of the expected levels of constituents in HLW Vitrification System input
2 streams, including, but not limited to, waste feed, glass former and reactants, control air,
3 process air, steam, sparge bubbler air, air in-leakage from melter cave, gases from HLW
4 Vitrification Vessel Ventilation System, and process water;
- 5 **III.10.J.5.f.xv** Documentation justifying the duration of the conditioning required to ensure the HLW
6 Vitrification System had achieved steady-state operations under Demonstration Test
7 operating conditions; and,
- 8 **III.10.J.5.f.xvi** Documentation of HLW Vitrification System process and leak detection system instruments
9 and monitors as listed on Permit Tables [III.10.J.C](#), [III.10.J.F](#), [III.10.K.C](#), and [III.10.K.F](#) to
10 include:
- 11 A. Procurement specifications;
- 12 B. Location used;
- 13 C. Range, precision, and accuracy;
- 14 D. Calibration/functionality test procedures (either method number ASTM) or provide a
15 copy of manufacturer's recommended calibration procedures;
- 16 E. Calibration/functionality test, inspection, and routine maintenance schedules and
17 checklists, including justification for calibration, inspection and maintenance frequencies,
18 criteria for identifying instruments found to be significantly out of calibration, and
19 corrective action to be taken for instruments found to be significantly out of calibration
20 (e.g., increasing frequency of calibration, instrument replacement, etc.); and,
- 21 F. Equipment instrument control logic narrative description (e.g., software functional
22 specifications, descriptions of failsafe conditions, etc.) [[WAC 173-303-680](#)(2), [WAC](#)
23 [173-303-806](#)(4)(i)(i)(B), and [WAC 173-303-806](#)(4)(i)(v)].
- 24 **III.10.J.5.f.xvii** Outline of demonstration test report.
- 25

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
<p><u>HLW Melter Process System</u></p> <p>HMP-MLTR-00001 (HLW Melter 1)</p> <p>HMP-MLTR-00002 (HLW Melter 2)</p>	HMP	RESERVED	Section 4.1.4.2; Table C-8; and Figures C1-1, C1-4, C1-27 and C1-54 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>Melter Offgas Treatment Process System</u></p> <p>HOP-FCLR-00001 (Melter 1 Offgas Film Cooler)</p> <p>HOP-FCLR-00002 (Melter 2 Offgas Film Cooler)</p> <p>HOP-FCLR-00003 (Melter 1 Standby Offgas Insert)</p> <p>HOP-FCLR-00004 (Melter 2 Standby Offgas Insert)</p>	HOP	<p><u>24590-HLW</u></p> <p>-M5-V17T-P0002, Rev1</p> <p>-M5-V17T-P20002, Rev 1</p> <p>-M6-HMP-00002, Rev 5</p> <p>-M6-HMP-20002, Rev 6</p> <p>-3YD-HOP-00001^a</p>	Section 4.1.4.3; Table C-8; and Figures C1-1, C1-4 and C1-27-in Operating Unit Group 10, Addendum C of this Permit.
<p><u>Melter Offgas Treatment Process System (Cont.)</u></p> <p>HOP-SCB-00001 (Melter 1 Submerged Bed Scrubber, SBS)</p> <p>HOP-SCB-00002 (Melter 2 Submerged Bed Scrubber, SBS)</p>	HOP	<p><u>24590-HLW</u></p> <p>-M5-V17T-P0003, Rev 1</p> <p>-M5-V17T-P20003, Rev 1</p> <p>-M6-HOP-00001, Rev 5</p> <p>-M6-HOP-20001, Rev 6</p> <p>-MKD-HOP-P0016, Rev 0</p> <p>-MK-HOP-P0001001, Rev 0</p> <p>-MK-HOP-P0001002, Rev 0</p> <p>-MK-HOP-P0001003, Rev 0</p> <p>-MK-HOP-P0001004, Rev 0</p> <p>-N1D-HOP-P0010, Rev 0</p> <p>-P1-P01T-00002, Rev 7</p> <p>-3YD-HOP-00001^a</p> <p><u>24590-WTP</u></p> <p>-3PS-MV00-T0001, Rev 4</p> <p>-3PS-MV00-T0002, Rev 3</p> <p>-3PS-MV00-T0003, Rev 3</p>	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>Melter Offgas Treatment Process System (Cont.)</u></p> <p>HOP-WESP-00001 (Melter 1 Wet Electrostatic Precipitator, WESP)</p> <p>HOP-WESP-00002 (Melter 2 Wet Electrostatic Precipitator, WESP)</p>	HOP	<p><u>24590-HLW</u></p> <p>-M5-V17T-P0003, Rev 1</p> <p>-M5-V17T-P20003, Rev 1</p> <p>-M6-HOP-00002, Rev 5</p> <p>-M6-HOP-20002, Rev 6</p> <p>-N1D-HOP-P0002, Rev 0</p> <p>-P1-P01T-00004, Rev 7</p> <p>-P1-P01T-00005, Rev 6</p>	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
		-3YD-HOP-00001 ^a <u>24590-WTP</u> -3PS-MKE0-T0001, Rev 5	
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HEPA-00001A (Melter 1 Primary Offgas HEPA Filter) HOP-HEPA-00001B (Melter 1 Primary Offgas HEPA Filter) HOP-HEPA-00002A (Melter 1 Secondary Offgas HEPA Filter) HOP-HEPA-00002B (Melter 1 Secondary Offgas HEPA Filter) HOP-HEPA-00007A (Melter 2 Primary Offgas HEPA Filter) HOP-HEPA-00007B (Melter 2 Primary Offgas HEPA Filter) HOP-HEPA-00008A (Melter 2 Secondary Offgas HEPA Filter) HOP-HEPA-00008B (Melter 2 Secondary Offgas HEPA Filter)	HOP	<u>24590-HLW</u> -M5-V17T-P0003, Rev 1 -M5-V17T-P20003, Rev 1 -M6-HOP-00010, Rev 3 -M6-HOP-20010, Rev 4 -MAD-HOP-00010, Rev 5 -MAD-HOP-00011, Rev 5 -MAD-HOP-00012, Rev 5 -MAD-HOP-00013, Rev 5 -MAD-HOP-00014, Rev 5 -MAD-HOP-00015, Rev 5 -MAD-HOP-00016, Rev 5 -MAD-HOP-00017, Rev 5 -P1-P01T-00002, Rev 7 -3YD-HOP-00001 ^a <u>24590-WTP</u> -3PS-MKH0-T0002, Rev 3	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-ADBR-00001A (Melter 1 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001) HOP-ADBR-00001B (Melter 1 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001) HOP-ADBR-00002A (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-P20004, Rev 0 -M6-HOP-P0003, Rev 2 -M6-HOP-P20003, Rev 2 -MVD-HOP-00015, Rev 3 -MVD-HOP-00016, Rev 3 -N1D-HOP-P0003, Rev 0 -P1-P01T-00002, Rev 7 <u>24590-WTP</u> -3PS-MWK0-T0001, Rev 4	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
00002) HOP-ADBR-00002B (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00002)			
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HEME-00001A (Melter 1 High Efficiency Mist Eliminator, HEME) HOP-HEME-00001B (Melter 1 High Efficiency Mist Eliminator, HEME) HOP-HEME-00002A (Melter 2 High Efficiency Mist Eliminator, HEME) HOP-HEME-00002B (Melter 2 High Efficiency Mist Eliminator, HEME)	HOP	<u>24590-HLW</u> -M5-V17T-P0003, Rev 1 -M5-V17T-P20003, Rev 1 -M6-HOP-00009, Rev 5 -M6-HOP-20009, Rev 6 -MVD-HOP-00007, Rev 5 -MV-HOP-P0002001, Rev 0 -MV-HOP-P0002002, Rev 0 -MV-HOP-P0002003, Rev 0 -N1D-HOP-P0001, Rev 0 -P1-PO1T-00002, Rev 7 -3YD-HOP-00001 ^a	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-SCO-00001 (Thermal Catalytic Oxidizer – located on Catalyst Skid HOP-SKID-00005) HOP-SCO-00004 (Thermal Catalytic Oxidizer – located on Catalyst Skid HOP-SKID-00007)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MKD-HOP-P0019, Rev 0 -MKD-HOP-P0020, Rev 0 -N1D-HOP-P0004, Rev 1 -N1D-HOP-P0005, Rev 1 -P1-PO1T-00002, Rev 7 -3PS-MBTV-T0002, Rev 1 <u>24590-LAW</u> -3PS-MBTV-T0001, Rev 1	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-SCR-00001 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SKID-00005) HOP-SCR-00002 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SKID-00007)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-P20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MKD-HOP-P0019, Rev 0 -MKD-HOP-P0020, Rev 0 -N1D-HOP-P0004, Rev 1 -N1D-HOP-P0005, Rev 1 -P1-PO1T-00002, Rev 7 -3PS-MBTV-T0002, Rev 1	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
		<u>24590-LAW</u> -3PS-MBTV-T0001, Rev 1	
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HX-00001 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SKID-00005) HOP-HX-00003 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SKID-00007)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MKD-HOP-P0019, Rev 0 -MKD-HOP-P0020, Rev 0 -P1-PO1T-P0002, Rev 7 -3PS-MBTV-T0002, Rev 1 <u>24590-LAW</u> -3PS-MBTV-T0001, Rev 1	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HTR-00001 (Catalyst Skid Electric Heater – located on Catalyst Skid HOP-SKID-00005) HOP-HTR-00007 (Catalyst Skid Electric Heaters – located on Catalyst Skid HOP-SKID-00007)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MKD-HOP-P0019, Rev 0 -MKD-HOP-P0020, Rev 0 -P1-PO1T-00002, Rev 7 -3PS-MBTV-T0002, Rev 1 <u>24590-LAW</u> -3PS-MBTV-T0001, Rev 1	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-ABS-00002 (Silver Mordenite Column) HOP-ABS-00003 (Silver Mordenite Column)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MKD-HOP-00014, Rev 5 -MKD-HOP-00017, Rev 7 -NID-HOP-P0006, Rev 1 -P1-P01T-00001, Rev 9 -3PS-MBT0-TP001, Rev 2	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HTR-00001B (HEPA Preheater) HOP-HTR-00002A (HEPA Preheater)	HOP	<u>24590-HLW</u> -M5-V17T-P0003, Rev 1 -M5-V17T-P20003, Rev 1 -M6-HOP-00010, Rev 3 -M6-HOP-20010, Rev 4 -MED-HOP-00013, Rev 4 -3PS-MEE0-T0001, Rev 1	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
HOP-HTR-00005A (HEPA Preheater) HOP-HTR-00005B (HEPA Preheater)			
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HX-00002 (Silver Mordenite Preheater) HOP-HX-00004 (Silver Mordenite Preheater)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00003, Rev 2 -M6-HOP-20003, Rev2 -N1D-HOP-P0007, Rev 0 -P1-P01T-00002, Rev 7	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-FAN-00001A (Booster Extraction Fan) HOP-FAN-00001B (Booster Extraction Fan) HOP-FAN-00001C (Booster Extraction Fan) HOP-FAN-00009A (Booster Extraction Fan) HOP-FAN-00009B (Booster Extraction Fan) HOP-FAN-00009C (Booster Extraction Fan)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00003, Rev 2 -M6-HOP-20003, Rev 2 -MAD-HOP-P0018, Rev 2 -P1-P01T-00001, Rev 9 <u>24590-WTP</u> -3PS-MACS-TP004, Rev 0	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-FAN-00008A (Stack Extraction Fan) HOP-FAN-00008B (Stack Extraction Fan) HOP-FAN-00008C (Stack Extraction Fan) HOP-FAN-000010A (Stack Extraction Fan) HOP-FAN-000010B (Stack Extraction Fan)	HOP	<u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2 -MAD-HOP-P0038, Rev 0 -P1-P01T-00005, Rev 6 <u>24590-WTP</u> -3PS-MACS-TP004, Rev 0	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
HOP-FAN-000010C (Stack Extraction Fan)			
<p><u>Melter Offgas Treatment Process System (Cont.)</u></p> <p>HLW Stack</p>	HOP	<p><u>24590-HLW</u> -M5-V17T-P0004, Rev 1 -M5-V17T-20004, Rev 0 -M6-HOP-00008, Rev 2 -M6-HOP-20008, Rev 2</p>	Section 4.1.4.3; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.
<p><u>Pulse Jet Ventilation System</u></p> <p>PJV-HTR-00002 (Pulse Jet Ventilation HEPA Electric Preheater)</p> <p>PJV-HEPA-00004B (PJV System HEPA Filter (Standby Primary))</p> <p>PJV-HEPA-00005B (PJV System HEPA Filter (Standby Secondary))</p> <p>PJV-HEPA-00004A (PJV System HEPA Filter (Primary))</p> <p>PJV-HEPA-00005A (PJV System HEPA Filter (Secondary))</p> <p>PJV-FAN-00002A (Pulse Jet Vent Extraction Fan)</p> <p>PJV-FAN-00002B (Pulse Jet Vent Extraction Fan)</p>	PJV	<p><u>24590-HLW</u> -M6-PJV-00001, Rev 4 -M6-PJV-00002, Rev 4</p>	
<p><u>Process Vessel Vent Extraction System</u></p> <p>PVV system contains ancillary equipment only.</p>	PVV	<p><u>24590-HLW</u> -M6-PVV-00001, Rev 4 -M6-PVV-20001, Rev 2</p>	
<p>Footnotes: ^aSystem Descriptions are maintained in the Administrative Record, and are listed here for information only.</p>			

Table III.10.J.B – HLW Vitrification Systems Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^a (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).					

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
24590-HLW-M6-HMP-00004, Rev 4	Melter 1 plenum temperature, 62"	TBD	(TE-0920A + TT-0920A + TI-0920A)* Or (TE-0920C + TT-0921A + TI-0921F)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00004, Rev 4	Melter 1 plenum	TBD	(TE-0920B + TT-920A + TI-	TBD	TBD	TBD	TBD	TBD

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
	temperature, 59”		0920B)* Or (TE-920D + TT-0921A + TI-0921E)*					
24590-HLW-M6-HMP-20004, Rev 5	Melter 2 plenum temperature, 62”	TBD	(TE-2920A + TT-2920A + TI-2920A)* Or (TE-2920C + TT-2921A + TI-2920C)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20004, Rev 5	Melter 2 plenum temperature, 59”	TBD	(TE-2920B + TT-2920A + TI-2920B)* Or (TE-2920D + TT-2921A + TI-2920D)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00013, Rev 4	Melter 1 glass pool	TBD	DT-0132	TBD	TBD	TBD	TBD	TBD

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
	density		DI-0132					
24590-HLW-M6-HMP-00013, Rev 4	Melter 1 glass pool level	TBD	LT-0131 LI-0131	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20013, Rev 5	Melter 2 glass pool density	TBD	DT-2132 DI-2132	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20013, Rev 5	Melter 2 glass pool level	TBD	LT-2131 LI-2131	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00013, Rev 4	Melter 1 plenum pressure	TBD	(PDT-0139A + PDI-0139A)* Or (PDT-0139B + PDI-0139B)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20013, Rev 5	Melter 2 plenum pressure	TBD	(PDT-2139A + PDI-2139A)* Or (PDT-2139B + PDI-2139B)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00008, Rev 4	Melter 1 West canister level	TBD	LT-0816 (LI-0816A Or LI-0816B)**	TBD	TBD	TBD	TBD	TBD

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
24590-HLW-M6-HMP-00007, Rev 4	Melter 1 West Discharge Air Lift	TBD	YC-0761 YV-0761	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00008, Rev 4	Melter 1 East canister level	TBD	LT-0820 (LI-0820A Or LI-0820B)**	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-00006, Rev 4	Melter 1 East Discharge Air Lift	TBD	YC-0644 YV-0644	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20008, Rev 5	Melter 2 West canister level	TBD	LT-2816 (LI-2816A Or LI-2816B)**	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20007, Rev 5	Melter 2 West Discharge Air Lift	TBD	YC-2761 YV-2761	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20008, Rev 5	Melter 2 East canister level	TBD	LT-2820 (LI-2820A Or LI-2820B)**	TBD	TBD	TBD	TBD	TBD

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
24590-HLW-M6-HMP-20006, Rev 5	Melter 2East Discharge Air Lift	TBD	YC-2664 YV-2664	TBD	TBD	TBD	TBD	TBD
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes:								
*These instrument sets are duplicates. Only one instrument set is required to remain functioning during waste feed operations.								
**These instruments are duplicates. Only one instrument is required to remain functioning during waste feed operations.								

Table III.10.J.D – Maximum Feed Rates to HLW Vitrification System (RESERVED)

Description of Waste	Shakedown 1	Shakedown 2, Demonstration Test and Post Demonstration Test
Dangerous and Mixed Waste Feed Rate	RESERVED	RESERVED
Ash Feed Rate	RESERVED	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED	RESERVED
Total Metal Feedrates	RESERVED	RESERVED

1

Table III.10.J.E – HLW Vitrification System Estimated Emission Rates (RESERVED)

Chemicals	CAS Number	Emission Rates(grams /second)
RESERVED	RESERVED	RESERVED

2

Table III.10.J.F - HLW Vitrification System Waste Feed Cut-off Parameters* (RESERVED)

Subsystem Designation	Instrument Tag Number	Parameter Description	Setpoints During Shakedown 1 and Post Demonstration Test	Setpoints During Shakedown 2 and Demonstration Test
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

*A continuous monitoring system will be used as defined in Permit Section [III.10.C.1](#).

¹Maximum feedrate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table [III.10.J.D](#) of this Permit

1 **III.10.K HLW VITRIFICATION SYSTEM – LONG TERM MISCELLANEOUS THERMAL**
2 **TREATMENT UNIT**

3 For purposes of Permit Section III.10.K, where reference is made to [WAC 173-303-640](#), the
4 following substitutions apply: substitute the terms “HLW Vitrification System” for “tank
5 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and
6 “sub-system(s) or sub-system equipment of a HLW Vitrification System” for “component(s),” in
7 accordance with [WAC 173-303-680](#).

8 **III.10.K.1 Requirements for HLW Vitrification System Beginning Normal Operation**

9 Prior to commencing normal operations provided in Permit Section III.10.K, all requirements in
10 Permit Section III.10.J will have been met by the Permittees and approved by Ecology, including the
11 following: The HLW Vitrification System Demonstration Test results and the revised Final Risk
12 Assessment provided for in Permit Conditions III.10.C.11.c or d and Permit Section III.10.J, will
13 have been evaluated and approved by Ecology, Permit Tables [III.10.K.D](#) and [F](#), as
14 approved/modified pursuant to Permit Condition III.10.J.5, will have been completed, submitted and
15 approved pursuant to Permit Condition III.10.J.3.d.v and Permit Table [III.10.K.E](#), as
16 approved/modified pursuant to Permit Condition III.10.J.5, will have been completed, submitted and
17 approved pursuant to Permit Conditions III.10.C.11.c or d.

18 **III.10.K.1.a Construction and Maintenance [[WAC 173-303-640](#), in accordance with [WAC 173-303-](#)**
19 **[680\(2\)](#) and (3), and [WAC 173-303-340](#)]**

20 **III.10.K.1.a.i** The Permittees will maintain the design and construction of the HLW Vitrification System
21 as specified in Permit Condition III.10.K.1, Operating Unit Group 10, Addendum C of this
22 Permit, and Operating Unit Group 10, Appendices 10.1 through 10.17 of this Permit, as
23 approved pursuant to Permit Conditions III.10.J.5.a through d and III.10.J.5.f.

24 **III.10.K.1.a.ii** The Permittees will maintain the design and construction of all containment systems for the
25 HLW Vitrification System as specified in Operating Unit Group 10, Addendum C of this
26 Permit, and Operating Unit Group 10, Appendices 10.2 and 10.4 through 10.14 of this
27 Permit, as approved pursuant to Permit Conditions III.10.J.5.a through d.

28 **III.10.K.1.a.iii** Modifications to approved design, plans, and specifications in Operating Unit Group 10, of
29 this Permit, for the HLW Vitrification System will be allowed only in accordance with
30 Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g, III.10.C.9.d, e, and h.

31 **III.10.K.1.a.iv** The Permittees will ensure all certifications required by specialists (e.g., IQRPE; registered,
32 professional engineer; independent corrosion expert; independent, qualified installation
33 inspector; installation inspector; etc.) use the following statement or equivalent pursuant to
34 Permit Condition III.10.C.10:

35 “I, (Insert Name) have (choose one or more of the following: overseen, supervised,
36 reviewed, and/or certified) a portion of the design or installation of a new HLW Vitrification
37 system or component located at (address), and owned/operated by (name(s)). My duties
38 were: (e.g., installation inspector, testing for tightness, etc.), for the following HLW
39 Vitrification system components (e.g., the venting piping, etc.), as required by the
40 Dangerous Waste Regulations, namely, [WAC 173-303-640\(3\)](#) (applicable paragraphs [i.e.,
41 (a) through (g)]), in accordance with [WAC 173-303-680](#).

1 “I certify under penalty of law that I have personally examined and am familiar with the
2 information submitted in this document and all attachments and that, based on my inquiry of
3 those individuals immediately responsible for obtaining the information, I believe that the
4 information is true, accurate, and complete. I am aware that there are significant penalties
5 for submitting false information, including the possibility of fine and imprisonment.”

6 **III.10.K.1.a.v** The Permittees will ensure periodic integrity assessments are conducted on the HLW
7 Vitrification System listed in Permit Table [III.10.I.A](#), as approved/modified pursuant to
8 Permit Condition III.10.J.5, over the term of this Permit, in accordance with [WAC 173-303-](#)
9 [680](#)(2) and (3), as specified in [WAC 173-303-640](#)(3)(b) following the description of the
10 integrity assessment program and schedule in Operating Unit Group 10, Addendum E of this
11 Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c. Results of
12 the integrity assessments will be included in the WTP Unit operating record until ten (10)
13 years after post-closure, or corrective action is complete and certified, whichever is later.

14 **III.10.K.1.a.vi** The Permittees will address problems detected during the HLW Vitrification System
15 integrity assessments specified in Permit Condition III.10.K.1.a.v following the description
16 of the integrity assessment program in Operating Unit Group 10, Addendum E of this
17 Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c.

18 **III.10.K.1.a.vii** All process monitors/instruments as specified in Permit Table [III.10.K.F](#), as
19 approved/modified pursuant to Permit Condition III.10.J.5 and III.10.J.3.d.v, will be
20 equipped with operational alarms to warn of deviation, or imminent deviation from the limits
21 specified in Permit Table [III.10.K.F](#).

22 **III.10.K.1.a.viii** The Permittees will install and test all process and leak detection system
23 monitors/instruments, as specified in Permit Tables [III.10.K.C](#) and [III.10.K.F](#), as
24 approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v, in accordance
25 with Operating Unit Group 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as approved
26 pursuant to Permit Conditions III.10.J.5.d.x and III.10.J.5.f.xvi.

27 **III.10.K.1.a.ix** No dangerous and/or mixed waste will be treated in the HLW Vitrification System unless the
28 operating conditions, specified under Permit Condition [III.10.K.1.c](#), are complied with.

29 **III.10.K.1.a.x** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
30 materials in the HLW Vitrification System if these substances could cause the sub-system,
31 sub-system equipment, or the containment system to rupture, leak, corrode, or otherwise fail
32 [[WAC 173-303-640](#)(5)(a), in accordance with [WAC 173-303-680](#)(2)]. This condition is not
33 applicable to corrosion of HLW Vitrification System sub-system or sub-system equipment
34 that are expected to be replaced as part of normal operations (e.g., melter).

35 **III.10.K.1.a.xi** The Permittees will operate the HLW Vitrification System to prevent spills and overflows
36 using the description of controls and practices as required under [WAC 173-303-640](#)(5)(b),
37 described in Permit Condition [III.10.C.5](#), and Operating Unit Group 10, Appendix 10.18 of
38 this Permit, as approved pursuant to Permit Condition III.10.J.5.e [[WAC 173-303-640](#)(5)(b),
39 in accordance with [WAC 173-303-680](#)(2) and (3), [WAC-173-303-806](#)(4)(c)(ix)].

40 **III.10.K.1.a.xii** For routinely non-accessible HLW Vitrification System sub-systems, as specified in
41 Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit
42 Condition III.10.J.5.e.vi, the Permittees will mark all routinely non-accessible HLW
43 Vitrification System sub-systems access points with labels or signs to identify the waste

1 contained in each HLW Vitrification System sub-system. The label, or sign, must be legible
2 at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
3 manner which adequately warns employees, emergency response personnel, and the public
4 of the major risk(s) associated with the waste being stored or treated in the HLW
5 Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-
6 accessible” means personnel are unable to enter these areas while waste is being managed in
7 them [[WAC 173-303-640](#)(5)(d), in accordance with [WAC 173-303-680](#)(2)].

8 **III.10.K.1.a.xiii**

9 For all the HLW Vitrification System sub-systems not addressed in Permit Condition
10 III.10.K.1.a.xii, the Permittees will mark all these HLW Vitrification System sub-systems
11 holding dangerous and/or mixed waste with labels or signs to identify the waste contained in
12 the HLW Vitrification System sub-systems. The labels, or signs, must be legible at a
13 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
14 manner which adequately warns employees, emergency response personnel, and the public
15 of the major risk(s) associated with the waste being stored or treated in the HLW
16 Vitrification System sub-systems [[WAC 173-303-640](#)(5)(d), in accordance with [WAC 173-
303-680](#)(2)].

17 **III.10.K.1.a.xiv**

18 The Permittees will ensure that the secondary containment systems for the HLW
19 Vitrification System sub-systems listed in Permit Tables [III.10.K.A](#) and [III.10.K.B](#), as
20 approved/modified pursuant to Permit Condition III.10.J.5, are free of cracks or gaps to
21 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
22 system to the soil, groundwater, or surface water at any time during the use of the HLW
23 Vitrification System sub-systems. Any indication that a crack or gap may exist in the
24 containment systems will be investigated and repaired in accordance with Operating Unit
25 Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition
26 III.10.J.5.e.v [[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](#)].

28 **III.10.K.1.a.xv**

29 The Permittees must immediately and safely remove from service any HLW Vitrification
30 System or secondary containment system which through an integrity assessment is found to
31 be “unfit for use” as defined in WAC 173-303-040, following Permit Condition
32 III.10.K.1.a.xvii.A through D, and F. The affected HLW Vitrification System or secondary
33 containment system must be either repaired or closed in accordance with Permit Condition
34 III.10.K.1.a.xvii.E [[WAC 173-303-640](#)(7)(e) and (f) and [WAC 173-303-640](#)(8), in
accordance with [WAC 173-303-680](#)(3)].

35 **III.10.K.1.a.xvi**

36 An impermeable coating, as specified in Operating Unit Group 10, Appendices 10.4, 10.5,
37 10.7, 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition
38 III.10.J.5.b.v, will be maintained for all concrete containment systems and concrete portions
39 of containment systems for the HLW Vitrification System sub-systems listed in Permit
40 Tables [III.10.K.A](#) and [III.10.K.B](#), as approved/modified pursuant to Permit Condition
41 III.10.J.5 (concrete containment systems that do not have a liner, pursuant to [WAC 173-303-
640](#)(4)(e)(i), in accordance with [WAC 173-303-680](#)(2), and have construction joints, will
42 meet the requirements of [WAC 173-303-640](#)(4)(e)(ii)(C), in accordance with [WAC 173-
303-680](#)(2). The coating will prevent migration of any dangerous and/or mixed waste into
43 the concrete. All coatings will meet the following performance standards:
44

- 1 A. The coating must seal the containment surface such that no cracks, seams, or other
2 avenues through which liquid could migrate are present;
- 3 B. The coating must be of adequate thickness and strength to withstand the normal operation
4 of equipment and personnel within the given area such that degradation or physical
5 damage to the coating or lining can be identified and remedied before dangerous and/or
6 mixed waste could migrate from the system; and,
- 7 C. The coating must be compatible with the dangerous and/or mixed waste, treatment
8 reagents, or other materials managed in the containment system [[WAC 173-303-](#)
9 [640\(4\)\(e\)\(ii\)\(D\)](#)], in accordance with [WAC 173-303-680\(2\)](#) and (3), and [WAC 173-303-](#)
10 [806\(4\)\(i\)\(i\)\(A\)](#)].

11 **III.10.K.1.a.xvii**

12 The Permittees will inspect all secondary containment systems for the HLW Vitrification
13 System sub-systems listed in Permit Tables [III.10.K.A](#) and [III.10.K.B](#), as approved/modified
14 pursuant to Permit Condition III.10.J.5, in accordance with the Inspection Schedule specified
15 in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit
16 Conditions III.10.J.5.e.i and III.10.C.5.c, and take the following actions if a leak or spill of
17 dangerous and/or mixed waste is detected in these containment systems [[WAC 173-303-](#)
18 [640\(5\)\(c\)](#), [WAC 173-303-640\(6\)](#) in accordance with [WAC 173-303-680\(2\)](#) and (3), [WAC](#)
[173-303-320](#), and [WAC 173-303-806\(4\)\(i\)\(i\)\(B\)](#)]:

- 19 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW
20 Vitrification System sub-systems or secondary containment system;
- 21 B. Determine the source of the dangerous and/or mixed waste;
- 22 C. Remove the dangerous and/or mixed waste from the containment area in accordance with
23 [WAC 173-303-680\(2\)](#) and (3), as specified in [WAC 173-303-640\(7\)\(b\)](#). The dangerous
24 and/or mixed waste removed from containment areas of the HLW Vitrification System
25 will be, at a minimum, managed as mixed waste;
- 26 D. If the cause of the release was a spill that has not damaged the integrity of the HLW
27 Vitrification System sub-system, the Permittees may return the HLW Vitrification
28 System sub-system to service in accordance with [WAC 173-303-680\(2\)](#) and (3), as
29 specified in [WAC 173-303-640\(7\)\(e\)\(ii\)](#). In such case, the Permittees will take action to
30 ensure the incident that caused the dangerous and/or mixed waste to enter the
31 containment system will not reoccur;
- 32 E. If the source of the dangerous and/or mixed waste is determined to be a leak in from the
33 primary HLW Vitrification System into the secondary containment system, or the system
34 is unfit for use as determined through an integrity assessment or other inspection, the
35 Permittees will comply with the requirements of [WAC 173-303-640\(7\)](#) and take the
36 following actions:
 - 37 1. Close the HLW Vitrification System sub-system following procedures in [WAC 173-](#)
38 [303-640\(7\)\(e\)\(i\)](#), in accordance with [WAC 173-303-680](#), and Operating Unit Group 10,
39 Addendum H of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#); or,
 - 40 2. Repair and re-certify (in accordance with [WAC 173-303-810\(13\)\(a\)](#), as modified
41 pursuant to Permit Condition [III.10.K.1.a.iii.](#)) the HLW Vitrification System, in
42 accordance with Operating Unit Group 10, Appendix 10.18 of this Permit, as approved
43 pursuant to Permit Condition [III.10.J.5.e.v.](#), before the HLW Vitrification System is
44 placed back into service [[WAC 173-303-640\(7\)\(e\)\(iii\)](#) and [WAC 173-303-640\(7\)\(f\)](#)], in
45 accordance with [WAC 173-303-680](#)];

1 F. The Permittees will document in the operating record actions/procedures taken to comply
2 with A through E above, as specified in [WAC 173-303-640\(6\)\(d\)](#), in accordance with
3 [WAC 173-303-680\(2\)](#) and (3); and,

4 G. In accordance with [WAC 173-303-680\(2\)](#) and (3), the Permittees will notify and report
5 releases to the environment to Ecology as specified in [WAC 173-303-640\(7\)\(d\)](#).

6 **III.10.K.1.a.xviii**

7 If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water,
8 liquids from damaged or broken pipes) cannot be removed from the secondary containment
9 system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four
10 (24) hours of discovery. The notification will provide the information in A, B, and C, listed
11 below. The Permittees will provide Ecology with a written demonstration within seven (7)
12 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\(4\)\(i\)\(B\)](#):

13 A. Reasons for delayed removal;

14 B. Measures implemented to ensure continued protection of human health and the
15 environment; and,

16 C. Current actions being taken to remove liquids from secondary containment.

17 **III.10.K.1.a.xix**

18 All air pollution control devices and capture systems in the HLW Vitrification System will
19 be maintained and operated at all times in a manner so as to minimize the emissions of air
20 contaminants and to minimize process upsets. Procedures for ensuring that the air pollution
21 control devices and capture systems in the HLW Vitrification System are properly operated
22 and maintained so as to minimize the emission of air contaminants and process upsets will
be established.

23 **III.10.K.1.a.xx**

24 In all future narrative permit submittals, the Permittees will include HLW Vitrification sub-
system names with the sub-system designation.

25 **III.10.K.1.a.xxi**

26 For any portion of the HLW Vitrification System which has the potential for formation and
27 accumulation of hydrogen gases, the Permittees will operate the portion to maintain
hydrogen levels below the LEL [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)].

28 **III.10.K.1.a.xxii**

29 For each HLW Vitrification System sub-system holding dangerous waste which are acutely
30 or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of
31 vapors, fumes, or other emissions into the air [[WAC 173-303-806\(4\)\(i\)\(B\)](#) and [WAC 173-
303-640\(5\)\(e\)](#)], in accordance with [WAC 173-303-680](#)].

32 **III.10.K.1.b Performance Standards**

33 **III.10.K.1.b.i**

34 The HLW Vitrification System must achieve a DRE of 99.99% for the PODCs listed below
35 [40 CFR §63.1203(c)(1) and 40 CFR §63.1203(c)(2), in accordance with [WAC 173-303-
680\(2\)](#)]:

36 RESERVED

37 DRE in this Permit Condition will be calculated in accordance with the formula given
38 below:

39
$$DRE = [1 - (W_{out}/W_{in})] \times 100\%$$

40 Where:

41 W_{in} = mass feedrate of one PODC in a waste feed stream; and,

- 1 W_{out} =mass emission rate of the same PODC present in exhaust emissions prior to release to
2 the atmosphere.
- 3 **III.10.K.1.b.ii** Particulate matter emissions from the HLW Vitrification System will not exceed 34
4 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with [WAC 173-303-
5 680\(2\)](#)];
- 6 **III.10.K.1.b.iii** Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not
7 exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with [WAC 173-303-680
8 \(2\)](#)];
- 9 **III.10.K.1.b.iv** Dioxin and Furan TEQ emissions from the HLW Vitrification System will not exceed 0.2
10 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with [WAC 173-303-680 \(2\)](#)];
- 11 **III.10.K.1.b.v** Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm [40 CFR
12 §63.1203(b)(2), in accordance with [WAC 173-303-680 \(2\)](#)];
- 13 **III.10.K.1.b.vi** Lead and cadmium emissions from the HLW Vitrification System will not exceed 120
14 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with [WAC 173-303-680\(2\)](#)];
- 15 **III.10.K.1.b.vii** Arsenic, beryllium, and chromium emissions from the HLW Vitrification System will not
16 exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with [WAC 173-303-
17 680\(2\)](#)];
- 18 **III.10.K.1.b.viii** CO emission from the HLW Vitrification System will not exceed 100 ppmv by volume, over
19 an hourly rolling average (as measured and recorded by the continuous monitoring system),
20 dry basis [40 CFR §63.1203(b)(5)(i), in accordance with [WAC 173-303-680\(2\)](#) and (3)];
- 21 **III.10.K.1.b.ix** Hydrocarbon emission from the HLW Vitrification System will not exceed 10 ppmv by
22 volume, over an hourly rolling average (as measured and recorded by the continuous
23 monitoring system during demonstration testing required by this Permit), dry basis and
24 reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with [WAC 173-303-680\(2\)](#)
25 and (3)];
- 26 **III.10.K.1.b.x** If the emissions from the HLW Vitrification System exceed the emission rates listed in
27 Permit Table [III.10.K.E](#), as approved pursuant to Permit Condition III.10.C.11.c or d, the
28 Permittees will perform the following actions [[WAC 173-303-680\(2\)](#) and (3), and [WAC
29 173-303-815\(2\)\(b\)\(ii\)](#)]:
- 30 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
31 emission rate(s) as specified in Permit Condition I.E.21;
- 32 B. Submit to Ecology additional risk information to indicate that the increased emissions
33 impact is off-set by decreased emission impact from one or more constituents expected to
34 be emitted at the same time, and/or investigate the cause and impact of the exceedence of
35 the emission rate(s) and submit a report of the investigation findings to Ecology within
36 fifteen (15) days of the discovery of exceeding the emission rate(s); and,
- 37 C. Based on the notification and any additional information, Ecology may provide, in
38 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
39 HLW Vitrification System and/or to submit a RDTP as a permit modification pursuant to
40 Permit Conditions [III.10.C.2.e](#) and [f](#), or [III.10.C.2.g](#). The RDTP must include substantive
41 changes to prevent failure from reoccurring.

1 The emission limits specified in Permit Conditions III.10.K.1.b.i through x above, will be
2 met for the HLW Vitrification System by limiting feed rates as specified in Permit Tables
3 [III.10.K.D](#) and [III.10.K.F](#), as approved/modified pursuant to Permit Condition III.10.J.5 and
4 III.10.J.3.d.v, compliance with operating conditions specified in Permit Condition
5 III.10.K.1.c (except as specified in Permit Condition III.10.K.1.b.xii), and compliance with
6 Permit Condition III.10.K.1.b.xi.

7 **III.10.K.1.b.xi** Treatment effectiveness, feedrates, and operating rates for dangerous and/or mixed waste
8 management units contained in the HLW Building, but not included in Permit Table
9 [III.10.K.A](#), as approved/modified pursuant to Permit Condition III.10.J.5, will be as
10 specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with the assumptions
11 and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as
12 approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit
13 condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1
14 upon its approval pursuant to either Permit Conditions III.10.C.11.c or [d \[WAC 173-303-](#)
15 [680\(2\)](#) and (3), and [WAC 173-303-815\(2\)\(b\)\(ii\)](#)].

16 **III.10.K.1.b.xii** Compliance with the operating conditions specified in Permit Condition III.10.K.1.c, will be
17 regarded as compliance with the required performance standards identified in Permit
18 Conditions III.10.K.1.b.i through x. However, if it is determined that during the effective
19 period of this Permit that compliance with the operating conditions in Permit Condition
20 III.10.K.1.c is not sufficient to ensure compliance with the performance standards specified
21 in Permit Conditions III.10.K.1.b.i through x, the Permit may be modified, revoked, or
22 reissued pursuant to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g.

23 **III.10.K.1.c Operating Conditions [\[WAC 173-303-670\(6\)](#), in accordance with [WAC 173-303-](#)**
24 **[680\(2\)](#)and (3)]**

25 The Permittees will operate the HLW Vitrification System in accordance with Operating Unit Group
26 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi, Operating
27 Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Conditions
28 III.10.J.5.e and f, and Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant
29 to Permit Condition III.10.J.5.f, except as modified pursuant to Permit Conditions III.10.J.3,
30 III.10.K.1.b.x, III.10.K.1.b.xii, III.10.K.1.h, and in accordance with and the following:

31 **III.10.K.1.c.i** The Permittees will operate the HLW Vitrification System in order to maintain the systems
32 and process parameters listed in Permit Tables [III.10.K.C](#) and [III.10.K.F](#), as
33 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, within the set-
34 points specified in Permit Table [III.10.K.F](#).

35 **III.10.K.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as
36 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, to automatically
37 cut-off and/or lock-out the dangerous and/or mixed waste feed to HLW Vitrification System
38 when the monitored operating conditions deviate from the set-points specified in Permit
39 Table [III.10.K.F](#).

40 **III.10.K.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as
41 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, to automatically
42 cutoff and/or lockout the dangerous and/or mixed waste feed to HLW Vitrification System
43 when all instruments specified on Permit Table [III.10.I.F](#) for measuring the monitored
44 parameters fails or exceeds its span value.

- 1 **III.10.K.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as
2 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, to automatically
3 cut-off and/or lock out the dangerous and/or mixed waste feed to the HLW Vitrification
4 System when any portion of the HLW Vitrification System is bypassed. The terms
5 “bypassed” and “bypass event” as used in Permit Sections III.10.J and K will mean if any
6 portion of the HLW Vitrification System is bypassed so that gases are not treated as during
7 the Demonstration Test.
- 8 **III.10.K.1.c.v** In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.K.F](#), as
9 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, the Permittees
10 will immediately, manually, cutoff the dangerous and/or mixed waste feed to the HLW
11 Vitrification System. The Permittees will not restart the dangerous and/or mixed waste feed
12 until the problem causing the malfunction has been identified and corrected.
- 13 **III.10.K.1.c.vi** The Permittees will manually cutoff the dangerous and/or mixed waste feed to the HLW
14 Vitrification System when the operating conditions deviate from the limits specified in
15 Permit Condition III.10.K.1.c.i, unless the deviation automatically activates the waste feed
16 cut-off sequence specified in Permit Conditions III.10.K.1.c.ii, iii, and/or iv.
- 17 **III.10.K.1.c.vii** If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the HLW
18 Vitrification System occur due to deviations from Permit Table [III.10.K.F](#), as
19 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, within a sixty
20 (60) day period, the Permittees will submit a written report to Ecology within five (5)
21 calendar days of the thirty-first (31) exceedence including the information specified below.
22 These dangerous and/or mixed waste feed cutoffs to the HLW Vitrification System, whether
23 automatically or manually activated, are counted if the specified set-points are deviated from
24 while dangerous and/or mixed waste and waste residues continue to be processed in the
25 HLW Vitrification System. A cascade event is counted at a frequency of one (1) towards the
26 first waste feed cut-off parameter, specified on Permit Table [III.10.K.F](#), from which the set-
27 point is deviated:
- 28 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.K.F](#);
 - 29 B. The magnitude, dates, and duration of the deviations;
 - 30 C. Results of the investigation of the cause of the deviations; and,
 - 31 D. Corrective measures taken to minimize future occurrences of the deviations.
- 32 **III.10.K.1.c.viii** If greater than thirty (30) dangerous and/or mixed waste feed cut-offs, combined, to the
33 HLW Vitrification System occur due to deviations from Permit Table [III.10.K.F](#), as
34 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v, within a thirty
35 (30) day period, the Permittees will submit the written report required to be submitted
36 pursuant to Permit Condition III.10.K.1.c.vii to Ecology, on the first business day following
37 the thirty-first exceedence. These dangerous and/or mixed waste feed cut-offs to the HLW
38 Vitrification System, whether automatically or manually activated, are counted if the
39 specified set-points are deviated from while dangerous and/or mixed waste and waste
40 residues continue to be processed in the HLW Vitrification System. A cascade event is
41 counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on
42 Permit Table [III.10.K.F](#), from which the set-point is deviated:

1 In accordance with [WAC 173-303-680](#)(2) and (3), the Permittees may not resume dangerous
2 and/or mixed waste feed to the HLW Vitrification System until this written report has been
3 submitted; and,

4 A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed
5 waste feed, or,

6 B. Ecology has not, within seven (7) days, notified the Permittees in writing of the
7 following:

- 8 1. The Permittees' written report does not document that the corrective measures taken will
9 minimize future exceedances; and,
- 10 2. The Permittees must take further corrective measures and document that these further
11 corrective measures will minimize future exceedances.

12 **III.10.K.1.c.ix**

If any portion of the HLW Vitrification System is bypassed while treating dangerous and/or
13 mixed waste, it will be regarded as non-compliance with the operating conditions specified
14 in Permit Condition III.10.K.1.c and the performance standards specified in Permit
15 Condition III.10.K.1.b. After such a bypass event, the Permittees will perform the following
16 actions:

17 A. Investigate the cause of the bypass event;

18 B. Take appropriate corrective measures to minimize future bypasses;

19 C. Record the investigation findings and corrective measures in the operating record; and,

20 D. Submit a written report to Ecology within five (5) days of the bypass event documenting
21 the result of the investigation and corrective measures.

22 **III.10.K.1.c.x**

The Permittees will control fugitive emissions from the HLW Vitrification System by
23 maintaining the melter under negative pressure.

24 **III.10.K.1.c.xi**

25 Compliance with the operating conditions specified in Permit Condition III.10.K.1.c will be
26 regarded as compliance with the required performance standards identified in Permit
27 Condition III.10.K.1.b. However, evidence that compliance with these operating conditions
28 is insufficient to ensure compliance with the performance standards, will justify
29 modification, revocation, or re-issuance of this Permit, in accordance with Permit Conditions
[III.10.C.2.e](#) and [f](#), or III.10.C.2.g.

30 **III.10.K.1.d Inspection Requirements [\[WAC 173-303-680\(3\)\]](#)**

31 **III.10.K.1.d.i**

The Permittees will inspect the HLW Vitrification System in accordance with the Inspection
32 Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in
33 accordance with Permit Condition III.10.C.5.c.

34 **III.10.K.1.d.ii**

The inspection data for HLW Vitrification System will be recorded, and the records will be
35 placed in the WTP Unit operating record for HLW Vitrification System, in accordance with
36 Permit Condition III.10.C.4.

37 **III.10.K.1.d.iii**

The Permittees will comply with the inspection requirements specified in Operating Unit
38 Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition
39 III.10.J.5.f, and as modified by Permit Conditions III.10.J.3, III.10.K.1.b.x, III.10.K.1.b.xii,
40 and III.10.K.1.h.

41 **III.10.K.1.d.iv**

The Permittees shall calibrate, inspect, and maintain or replace the following cooling water
42 flow and temperature instruments: (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-
Part III, Operating Unit Conditions 10.260

- 1 0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-
2 2326, FT/FI-2336) in accordance with manufacturer's recommendations.
- 3 **III.10.K.1.d.v** The Permittees shall maintain operating and calibration/maintenance records for Ecology's
4 inspection for the following cooling water flow and temperature instruments (Melter 1:
5 FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2:
6 FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336).
- 7 **III.10.K.1.d.vi** The Permittees shall maintain refractory thermocouple temperature data for Ecology
8 inspection.
- 9 **III.10.K.1.e** **Monitoring Requirements** [\[WAC 173-303-670\(5\)\]](#), [\[WAC 173-303-670\(6\)\]](#), [\[WAC 173-303-](#)
10 [670\(7\)\]](#), and [\[WAC 173-303-807\(2\)\]](#), in accordance with [\[WAC 173-303-680\(3\)\]](#)
- 11 **III.10.K.1.e.i** Upon receipt of a written request from Ecology, the Permittees will perform sampling and
12 analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the
13 operating requirements established in the permit achieve the performance standards
14 delineated in this Permit.
- 15 **III.10.K.1.e.ii** The Permittees will comply with the monitoring requirements specified in the Operating
16 Unit Group 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as
17 approved pursuant to Permit Condition III.10.J.5, and as modified by Permit Conditions
18 III.10.J.3, III.10.K.1.h, and III.10.K.1.b.x and xii.
- 19 **III.10.K.1.e.iii** The Permittees will operate, calibrate, and maintain the CO and hydrocarbon continuous
20 emission monitors (CEM) specified in this Permit in accordance with Performance
21 Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to
22 Subpart EEE of 40 CFR Part 63, and Operating Unit Group 10 Appendix 10.15 of this
23 Permit, as approved pursuant to Permit Condition III.10.J.5.f, and as modified by Permit
24 Conditions III.10.H.3, III.10.K.1.h, and III.10.K.1.b.x and xii.
- 25 **III.10.K.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit
26 Tables [III.10.K.C](#) and F, as approved/modified pursuant to Permit Conditions III.10.J.5 and
27 [III.J.3.d.v](#), in accordance with Operating Unit Group 10, Appendix 10.15 of this Permit, as
28 approved pursuant to Permit Condition III.10.J.5.f, and as modified by Permit Conditions
29 III.10.J.3, III.10.K.1.h, and III.10.K.1.b.x and xii.
- 30 **III.10.K.1.f** **Recordkeeping Requirements** [\[WAC 173-303-380\]](#) and [\[WAC 173-303-680\(3\)\]](#)
- 31 **III.10.K.1.f.i** The Permittees will record and maintain in the WTP Unit operating record for the HLW
32 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data
33 compiled under the conditions of this Permit, in accordance with Permit Conditions
34 III.10.C.4 and 5 as modified by Permit Conditions III.10.J.3, III.10.K.1.h, and III.10.K.1.b.x
35 and xii.
- 36 **III.10.K.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of
37 all AWFCOs and/or lockouts, including the triggering parameters, reason for the deviation,
38 and recurrence of the incident. The Permittees will also record all incidents of AWFCO
39 system function failures, including the corrective measures taken to correct the condition that
40 caused the failure.
- 41 **III.10.K.1.f.iii** The Permittees will submit to Ecology an annual report each calendar year within ninety
42 (90) days following the end of the year. The report will include the following information:

- 1 A. Total dangerous and/or mixed waste feed processing time for the HLW Vitrification
2 System;
- 3 B. Date/Time of all HLW Vitrification System startups and shutdowns;
- 4 C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System
5 shutdowns caused by malfunction of either process or control equipment; and,
- 6 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous
7 and/or mixed waste feed cutoffs due to deviations from Permit Table [III.10.K.F](#), as
8 approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v.
- 9 **III.10.K.1.f.iv** The Permittees will submit an annual report to Ecology each calendar year within ninety
10 (90) days following the end of the year of all quarterly CEM Calibration Error and Annual
11 CEM Performance Specification Tests conducted in accordance with Permit Condition
12 III.10.K.1.e.iii.
- 13 **III.10.K.1.g Closure**
- 14 The Permittees will close the HLW Vitrification System in accordance with Operating Unit
15 Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#).
- 16 **III.10.K.1.h Periodic Emission Re-testing Requirements [[WAC 173-303-670\(5\)](#), [WAC 173-303-](#)
17 [670\(7\)](#), and [WAC 173-303-807\(2\)](#), in accordance with [WAC 173-303-680\(2\)](#) and (3)]**
- 18 **III.10.K.1.h.i Dioxin and Furan Emission Testing**
- 19 A. Within eighteen (18) months of commencing operation pursuant to Permit Section
20 III.10.K, the Permittees will submit to Ecology for approval, a DFETP for the
21 performance of emission testing of the HLW Vitrification System gases for dioxin and
22 furans during “Normal Operating Conditions” as a permit modification in accordance
23 with Permit Conditions [III.10.C.2.e](#) and [f](#). The DFETP will include all elements
24 applicable to dioxin and furan emission testing included in the “Previously Approved
25 Demonstration Test Plan,” applicable EPA promulgated test methods and procedures in
26 effect at the time of the submittal, and projected commencement and completion dates for
27 dioxin and furan emission test. “Normal Operating Conditions” will be defined for the
28 purposes of this permit condition as follows:
- 29 1. CO emissions, dangerous and/or mixed waste feed-rate, and AWFCO parameters
30 specified on Permit Table [III.10.K.F](#) (as approved/modified pursuant to Permit
31 Conditions III.10.J.5 and III.10.J.3.d.v), that were established to maintain compliance
32 with Permit Condition III.10.K.1.b.iv, as specified in Operating Unit Group 10, Appendix
33 10.15 of this Permit (as approved pursuant to Permit Condition III.10.J.3.d and in
34 accordance with III.10.K.1.b.xii and III.10.K.1.c.xi), are held within the range of the
35 average value over the previous twelve (12) months and the set-point value specified on
36 Permit Table [III.10.K.F](#). The average value is defined as the sum of the rolling average
37 values recorded over the previous twelve (12) months divided by the number of rolling
38 averages recorded during that time. The average value will not include calibration data,
39 malfunction data, and data obtained when not processing dangerous and/or mixed waste;
40 and,
- 41 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
42 value over the previous twelve (12) months and the set-point value specified on Permit
43 Table [III.10.K.D](#) (as approved/modified pursuant to Permit Conditions III.10.J.5 and

1 III.10.J.3.d.v). Feedrates of organics, as measured by TOC, are held within the range of
2 the average value over the previous twelve (12) months. The average value is defined as
3 the sum of the rolling average values recorded over the previous twelve (12) months
4 divided by the number of rolling averages recorded during that time. The average value
5 will not include data obtained when not processing dangerous and/or mixed waste.

6 For purposes of this permit Condition, the “Previously Approved Demonstration Test Plan” is
7 defined to include the Demonstration Test Plan approved pursuant to Permit Condition
8 III.10.J.5.f.

- 9 B. Within sixty (60) days of Ecology’s approval of the DFETP, or within thirty-one (31)
10 months of commencing operation pursuant to Permit Section III.10.K, whichever is later,
11 the Permittees will implement the DFETP approved, pursuant to Permit Condition
12 III.10.K.1.h.i.A.
- 13 C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition
14 III.10.K.1.h.i.A, revised to include applicable EPA promulgated test methods and
15 procedures in effect at the time of the submittal, and projected commencement and
16 completion dates for dioxin and furan emission test as a permit modification in
17 accordance with Permit Conditions [III.10.C.2.e](#) and f. at twenty-four (24) months from
18 the implementation date of the testing required pursuant to Permit Condition
19 III.10.K.1.h.i.A and at reoccurring eighteen (18) month intervals from the implementation
20 date of the previously approved DFETP. The Permittees will implement these newly
21 approved revised DFETPs every thirty-one (31) months from the previous approved
22 DFETP implementation date or within sixty (60) days of the newly Ecology approved
23 revised DFETP, whichever is later, for the duration of this Permit.
- 24 D. The Permittees will submit a summary of operating data collected pursuant to the
25 DFETPs in accordance with Permit Conditions III.10.K.1.h.i.A and C to Ecology upon
26 completion of the tests. The Permittees will submit to Ecology the complete test report
27 within ninety (90) calendar days of completion of the testing. The test reports will be
28 certified as specified in [WAC 173-303-807\(8\)](#), in accordance with [WAC 173-303-680\(2\)](#)
29 and (3).
- 30 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with
31 Permit Conditions III.10.K.1.h.i.A and C show that one or more of the performance
32 standards listed in Permit Condition III.10.K.1.b, with the exception of Permit Condition
33 III.10.K.1.b.x, for the HLW Vitrification System were not met during the emission test,
34 the Permittees will perform the following actions:
- 35 1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System
36 under the mode of operation that resulted in not meeting the performance standard(s);
 - 37 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
38 performance standard(s) as specified in Permit Condition I.E.21;
 - 39 3. Investigate the cause of the failure and submit a report of the investigation findings to
40 Ecology within fifteen (15) days of discovery of not meeting the performance
41 standard(s);
 - 42 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
43 standard(s) documentation supporting a mode of operation where all performance
44 standards listed in Permit Condition III.K.1.b, with the exception of Permit Condition

1 III.10.K.1.b.x, for the HLW Vitrification System were met during the demonstration test,
2 if any such mode was demonstrated;

- 3 5. Based on the information provided to Ecology by the Permittees, pursuant to Permit
4 Conditions III.10.K.1.h.i.E.1 through 4 above, and any additional information, Ecology
5 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed
6 waste feed to the HLW Vitrification System and/or amend the mode of operation the
7 Permittees are allowed to continue operations prior to Ecology approval of the revised
8 Demonstration Test Plan pursuant to Permit Condition III.10. K.1.h.i.E.6;
- 9 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
10 meeting the performance standard(s) a RDTP requesting approval to retest as a permit
11 modification pursuant to Permit Conditions III.10.C.2.e and f. The revised
12 Demonstration Test Plan must include substantive changes to prevent failure from
13 reoccurring reflecting performance under operating conditions representative of the
14 extreme range of normal conditions, and include revisions to Permit Tables [III.10.K.D](#)
15 and [F](#).
- 16 F. If any calculations or testing results collected pursuant to the DFETPs in accordance with
17 Permit Conditions III.10.K.1.h.i.A and C show that any emission rate for any constituent
18 listed in Permit Table [III.10.K.E](#), as approved/modified pursuant to Permit Conditions
19 III.10.C.11.c or d, is exceeded for HLW Vitrification System during the emission test, the
20 Permittees will perform the following actions:
- 21 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
22 emission rate(s) as specified in Permit Condition I.E.21;
- 23 2. Submit to Ecology additional risk information to indicate that the increased emissions
24 impact is off-set by decreased emission impact from one or more constituents expected
25 to be emitted at the same time, and/or investigate the cause and impact of the exceedence
26 and submit a report of the investigation findings to Ecology within fifteen (15) days of
27 this discovery of exceeding the emission rate(s); and
- 28 3. Based on the notification and any additional information, Ecology may provide, in
29 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
30 HLW Vitrification System and/or to submit a RDTP as a permit modification pursuant
31 to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g. The RDTP must include
32 substantive changes to prevent failure from reoccurring reflecting performance under
33 operating conditions representative of the extreme range of normal conditions, and
34 include revisions to Permit Tables [III.10.K.D](#) and [F](#).

35 **III.10.K.1.h.ii**

Non-organic Emission Testing

- 36 A. Within forty-eight (48) months of commencing operation pursuant to Permit Section
37 III.10.K, the Permittees will resubmit to Ecology for approval the “Previously Approved
38 Demonstration Test Plan” revised as a permit modification in accordance with Permit
39 Conditions [III.10.C.2.e](#) and f. The RDTP will include applicable EPA promulgated test
40 methods and procedures in effect at the time of the submittal, projected commencement
41 and completion dates for emission testing to demonstrate performance standards specified
42 in Permit Conditions III.10.K.1.b.ii, iii, v, vi, and vii, and non-organic emissions as
43 specified in Permit Table [III.10.K.E](#), as approved/modified pursuant to Permit Conditions
44 III.10.J.3.d and III.10.C.11.c or d., under “Normal Operating Conditions.” “Normal

1 Operating Conditions” will be defined for the purposes of this permit condition as
2 follows:

- 3 1. CO emissions, dangerous and/or mixed waste feed-rate, and AWFCO parameters
4 specified in Permit Table [III.10.K.F](#), as approved/modified pursuant to Permit
5 Conditions III.10.J.3.d and III.10.C.11.c or d, that were established to maintain
6 compliance with Permit Conditions III.10.K.1.b.ii, iii, v, vi, and vii, and non-organic
7 emissions, as specified in Permit Table [III.10.K.E](#), as specified in Operating Unit Group
8 10, Appendix 10.15 of this Permit (as approved pursuant to Permit Conditions
9 III.10.J.3.d and III.10.C.11.c or d), are held within the range of the average value over
10 the previous twelve (12) months and the set-point value specified on Permit Table
11 [III.10.K.F](#). The average value is defined as the sum of the rolling average values
12 recorded over the previous twelve (12) months divided by the number of rolling
13 averages recorded during that time. The average value will not include calibration data,
14 malfunction data, and data obtained when not processing dangerous and/or mixed waste;
15 and,
16 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
17 values over the previous twelve (12) months and the set-point value specified on Permit
18 Table [III.10.K.D](#), as approved/modified pursuant to Permit Conditions III.10.J.3.d and
19 III.10.C.11.c or d. The average value is defined as the sum of all rolling average values
20 recorded over the previous twelve (12) months divided by the number of rolling
21 averages recorded during that time. The average value will not include data obtained
22 when not processing dangerous and/or mixed waste.

23 For purposes of this permit Condition, the “Previously Approved Demonstration Test Plan” is
24 defined to include the Demonstration Test Plan approved pursuant to Permit Condition
25 III.10.J.5.f.

- 26 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within sixty (60) months of
27 commencing operation pursuant to Permit Section III.10.K, whichever is later, the
28 Permittees will implement the RDTP approved pursuant to Permit Condition
29 III.10.K.1.h.ii.A.
30 C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition
31 III.10.K.1.h.ii.A, revised to include applicable EPA promulgated test methods and
32 procedures in effect at the time of the submittal, and projected commencement and
33 completion dates for emission test as a permit modification in accordance with Permit
34 Conditions III.10.C.2.e and f. at forty-eight (48) months from the implementation date of
35 the testing required pursuant to Permit Condition III.10.K.1.h.ii.A and at reoccurring
36 forty-eight (48) month intervals from the implementation date of the previously approved
37 RDTP. The Permittees will implement these newly approved RDTP, every sixty (60)
38 months from the previous approved RDTP implementation date or within sixty (60) days
39 of the newly Ecology approved RDTP, whichever is later, for the duration of this Permit.
40 D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs
41 in accordance with Permit Conditions III.10.K.1.h.ii.A and C to Ecology upon
42 completion of the tests. The Permittees will submit to Ecology the complete test report
43 within ninety (90) calendar days of completion of the testing. The test reports will be
44 certified pursuant to [WAC 173-303-807](#)(8), in accordance with [WAC 173-303-680](#)(2)
45 and (3).

- 1 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with
2 Permit Conditions III.10.K.1.h.ii.A and C show that any emission rate for any constituent
3 listed in Permit Table [III.10.K.E](#), as approved/modified pursuant to Permit Conditions
4 III.10.J.3.d and III.10.C.11.c or d, is exceeded for HLW Vitrification System during the
5 emission test, the Permittees will perform the following actions:
- 6 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
7 emission rate(s) as specified in Permit Condition I.E.21;
 - 8 2. Submit to Ecology additional risk information to indicate that the increased emissions
9 impact is offset by decreased emission impact from one or more constituents expected to
10 be emitted at the same time, and/or investigate the cause and impact of the exceedence
11 and submit a report of the investigation findings to Ecology within fifteen (15) days of
12 this discovery of exceeding the emission rate(s); and,
 - 13 3. Based on the notification and any additional information, Ecology may provide, in
14 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
15 HLW Vitrification System and/or to submit a RDTP as a permit modification pursuant
16 to Permit Conditions [III.10.C.2.e](#) and f, or III.10.C.2.g. The RDTP must include
17 substantive changes to prevent failure from reoccurring reflecting performance under
18 operating conditions representative of the extreme range of normal conditions, and
19 include revisions to Permit Tables [III.10.K.D](#) and [III.10.K.F](#).
- 20 F. If any calculations or testing results collected pursuant to the DFETPs in accordance with
21 Permit Conditions III.10.K.1.h.ii.A and C show that one or more of the performance
22 standards listed in Permit Condition III.10.K.1.b, with the exception of Permit Condition
23 III.10.K.1.b.x, for the HLW Vitrification System were not met during the emission test,
24 the Permittees will perform the following actions:
- 25 1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System
26 under the mode of operation that resulted in not meeting the performance standard(s);
 - 27 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
28 performance standard(s), as specified in Permit Condition I.E.21;
 - 29 3. Investigate the cause of the failure and submit a report of the investigation findings to
30 Ecology within fifteen (15) days of discovery of not meeting the performance
31 standard(s);
 - 32 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
33 standard(s) documentation supporting a mode of operation where all performance
34 standards listed in Permit Condition III.K.1.b, with the exception of Permit Condition
35 III.10.K.1.b.x, for the HLW Vitrification System were met during the demonstration test,
36 if any such mode was demonstrated;
 - 37 5. Based on the information provided to Ecology by the Permittees pursuant to Permit
38 Conditions III.10.K.1.h.ii.F.1 through 4 above, and any additional information, Ecology
39 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed
40 waste feed to the HLW Vitrification System and/or amend the mode of operation the
41 Permittees are allowed to continue operations prior to Ecology approval of the RDTP
42 pursuant to Permit Condition III.10.K.1.h.ii.F.6.
 - 43 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
44 meeting the performance standard(s) a RDTP requesting approval to retest as a permit
45 modification pursuant to Permit Conditions [III.10.C.2.e](#) and f. The RDTP must include

1 substantive changes to prevent failure from reoccurring reflecting performance under
2 operating conditions representative of the extreme range of normal conditions, and
3 include revisions to Permit Tables [III.10.K.D](#) and [F](#).

4 **III.10.K.1.h.iii**

Other Emission Testing

- 5 A. Within seventy-eight (78) months of commencing operation pursuant to Permit Section
6 III.10.K, the Permittees will resubmit to Ecology for approval the “Previously Approved
7 Demonstration Test Plan” revised as a permit modification in accordance with Permit
8 Conditions III.10.C.2.e and f. The revised Demonstration Test Plan (RDTP) will include
9 applicable EPA promulgated test methods and procedures in effect at the time of the
10 submittal, projected commencement and completion dates for emission testing to
11 demonstrate performance standards as specified in Permit Conditions III.10.K.1.b.viii.
12 and ix, and emissions as specified on Permit Table [III.10.K.E](#), as approved/modified
13 pursuant to Permit Conditions III.10.J.3.d and III.10.C.11.c or d, not addressed under
14 Permit Conditions III.10.K.1.h.i or ii under “Normal Operating Conditions.” “Normal
15 Operating Conditions” will be defined for the purposes of this permit Condition as
16 follows:
- 17 1. CO emissions, dangerous and/or mixed waste feedrate, and AWFCO parameters
18 specified on Permit Table [III.10.K.F](#), as approved/modified pursuant to Permit Condition
19 III.10.J.3.d and III.10.C.11.c or d., that were established to maintain compliance with
20 Permit Conditions III.10.K.1.b.viii and ix, and emissions as specified on Permit Table
21 [III.10.K.E](#), not addressed under Permit Conditions III.10.K.1.h.i or ii as specified in
22 Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit
23 Condition III.10.J.3.d, and in accordance with Permit Conditions III.10.K.1.b.xii and
24 III.10.K.1.c.xi are held within the range of the average value over the previous twelve
25 (12) months and the set-point value specified on Permit Table [III.10.K.F](#). The average
26 value is defined as the sum of all rolling average values recorded over the previous
27 twelve (12) months divided by the number of rolling averages recorded during that time.
28 The average value will not include calibration data, malfunction data, and data obtained
29 when not processing dangerous and/or mixed waste; and,
 - 30 2. Feedrates of metals, ash, and chlorine/chloride are held within the range of the average
31 values over the previous twelve (12) months and the set-point value specified on Permit
32 Table [III.10.K.D](#), as approved/modified pursuant to Permit Conditions III.10.J.3.d and
33 III.10.C.11.c or d. Feedrates of organics as measured by TOC are held within the range
34 of the average value over the previous twelve (12) months. The average value is defined
35 as the sum of the rolling average values recorded over the previous twelve (12) months
36 divided by the number of rolling averages recorded during that time. The average value
37 will not include data obtained when not processing dangerous and/or mixed waste.
38 For purposes of this permit Condition, the “Previously Approved Demonstration Test
39 Plan” is defined to include the Demonstration Test Plan approved pursuant to Permit
40 Condition III.10.J.5.f.
 - 41 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within ninety-one (91)
42 months of commencing operation pursuant to Permit Section III.10.K, whichever is later,
43 the Permittees will implement the RDTP approved pursuant to Permit Condition
44 III.10.K.1.h.iii.A.

- 1 C. The Permittees will submit a summary of operating data collected pursuant to the RDTPs
2 in accordance with Permit Condition III.10.K.1.h.iii.A to Ecology upon completion of the
3 tests. The Permittees will submit to Ecology the complete test report within ninety (90)
4 calendar days of completion of the testing. The test reports will be certified as specified
5 in [WAC 173-303-807](#)(8), in accordance with Permit Condition [WAC 173-303-680](#)(2)
6 and (3).
- 7 D. If any calculations or testing results show that one or more of the performance standards
8 listed in Permit Condition [III.10.K.1.b.](#), with the exception of Permit Condition
9 [III.10.K.1.b.x.](#), for the HLW Vitrification System were not met during the emission test,
10 the Permittees will perform the following actions:
- 11 1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System
12 under the mode of operation that resulted in not meeting the performance standard(s);
 - 13 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the
14 performance standard(s), as specified Permit Condition I.E.21;
 - 15 3. Investigate the cause of the failure and submit a report of the investigation findings to
16 Ecology within fifteen (15) days of discovery of not meeting the performance
17 standard(s);
 - 18 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance
19 standard(s) documentation supporting a mode of operation where all performance
20 standards listed in Permit Condition III.10.K.1.b, with the exception of Permit Condition
21 III.10.K.1.b.x, for the HLW Vitrification System were met during the demonstration test,
22 if any such mode was demonstrated;
 - 23 5. Based on the information provided to Ecology by the Permittees pursuant to Permit
24 Conditions III.10.K.1.h.iii.D.1 through 4 above, and any additional information, Ecology
25 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed
26 waste feed to the HLW Vitrification System and/or amend the mode of operation the
27 Permittees are allowed to continue operations prior to Ecology approval of the RDTP,
28 pursuant to Permit Condition III.10.K.1.h.iii.D.6;
 - 29 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not
30 meeting the performance standard(s) a RDTP requesting approval to retest as a permit
31 modification pursuant to Permit Conditions II.10.C.2.e and f. The RDTP must include
32 substantive changes to prevent failure from reoccurring reflecting performance under
33 operating conditions representative of the extreme range of normal conditions, and
34 include revisions to Permit Tables [III.10.K.D](#) and F.
- 35 E. If any calculations or testing results show that any emission rate for any constituent listed
36 in Permit Table [III.10.K.E.](#), as approved/modified pursuant to Permit Condition
37 III.10.C.11.c or d., is exceeded for HLW Vitrification System during the emission test,
38 the Permittees will perform the following actions:
- 39 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the
40 emission rate(s) as specified in Permit Condition I.E.21;
 - 41 2. Submit to Ecology additional risk information to indicate that the increased emissions
42 impact is off-set by decreased emission impact from one or more constituents expected
43 to be emitted at the same time, and/or investigate the cause and impact of the exceedence
44 of the emission rate(s) and submit a report of the investigation findings to Ecology
45 within fifteen (15) days of the discovery of the exceedence of the emission rate(s); and,

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3. Based on the notification and any additional information, Ecology may provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the HLW Vitrification System and/or to submit a RDTP as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and [f](#), or [III.10.C.2.g](#). The RDTP must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables [III.10.K.D](#) and [E](#).

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Table III.10.K.A - HLW Vitrification System Description

Sub-system Description	Sub-System Designation	Engineering Description (Drawing Nos., etc.)	Narrative Description, Tables, and Figures
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.K.A will be completed in accordance with Permit Condition III.10.J.5.e.x., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.A for the current HLW Vitrification System Description.			

Table III.10.K.B - HLW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.K.B will be completed in accordance with Permit Condition III.10.J.5.b.vii., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.B for the current HLW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains. ^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

Table III.10.K.C - HLW Vitrification System 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
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Permit Table III.10.K.C will be completed in accordance with Permit Condition III.10.J.5.e.ix., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.C for the current HLW Vitrification System Process and Leak Detection System Instruments and Parameters.								

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Table III.10.K.D – Maximum Feed Rates to HLW Vitrification System (RESERVED)

Description of Waste	Normal Operation
Dangerous and/or Mixed Waste feed rate	RESERVED
Ash Feed Rate	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED
Total Metal Feed Rates	RESERVED

1

Table III.10.K.E – HLW Vitrification System Estimated Emission Rates (RESERVED)

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

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**TABLE III.10.K.F - HLW Vitrification System Waste Feed Cut-off Parameters¹
²(RESERVED)**

Sub-system Designation	Instrument Tag Number	Parameter Description	Set-points During Normal Operation
RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

¹A continuous monitoring system will be used as defined in Permit Section [III.10.C.1](#).

²Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table [III.10.K.D](#). of this Permit

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