# PART III, OPERATING UNIT GROUP 10 – SPECIFIC CONDITIONS
# WASTE TREATMENT AND IMMOBILIZATION PLANT

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# PART III, OPERATING UNIT GROUP 10 – SPECIFIC CONDITIONS
# 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 Building or the Low-Activity Waste 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

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| 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 |

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|---|---|
| Appendix 2.0 | Critical Systems |
| Appendix 3.0 | RESERVED |
| Appendix 4.0 | RESERVED |
| Appendix 5.0 | RESERVED |
| Appendix 6.0 | Risk Assessment |
| Appendix 6.0, §6.1 | Environmental Risk Assessment Work Plan |
| Appendix 6.0, §6.1.1 | Previously Submitted Preliminary Risk Assessment Work Plan |
| Appendix 6.0, §6.1.2 | Documentation of Revisions to Preliminary Risk Assessment Work Plan |
| Appendix 6.0, §6.2 | Final Risk Assessment Work Plan (RESERVED) |
| Appendix 6.0, §6.3 | Pre-Demonstration Test Risk Assessment Report (RESERVED) |
| Appendix 6.0, §6.3.1 | Basis and Assumptions (RESERVED) |
| Appendix 6.0, §6.4 | Final Risk Assessment Report (RESERVED) |
| Appendix 6.0, §6.4.1 | Basis and Assumptions (RESERVED) |
| Appendix 7.0 | WTP Documents Applicable to All Regulated Areas |
| Appendix 7.0, §7.1 | Process Flow Diagrams |
| Appendix 7.0, §7.2 | Piping and Instrumentation Diagrams & Related Documents |
| Appendix 7.0, §7.3 | System Description Documentation (RESERVED) |
| Appendix 7.0, §7.4 | General Arrangement Drawings (RESERVED) |
| Appendix 7.0, §7.5 | Civil, Structural, and Architectural Criteria and Typical Design Details |
| Appendix 7.0, §7.6 | Mechanical Drawings (RESERVED) |
| Appendix 7.0, §7.7 | Specifications |
| Appendix 7.0, §7.8 | Engineering Calculations (RESERVED) |
| Appendix 7.0, §7.9 | Material Selection and Corrosion Evaluation Documentation |
| Appendix 7.0, §7.10 | Critical Systems Equipment/Instrument List (RESERVED) |
| Appendix 7.0, §7.11 | IQRPE Reports |
| Appendix 7.0, §7.12 | Installation Plans |
| Appendix 7.0, §7.13 | Instrument Control Logic and Narrative Description (RESERVED) |
| Appendix 7.0, §7.14 | Descriptions of Instrument Installation and Testing Procedures (RESERVED) |
| Appendix 7.0, §7.15 | Operating Documents |
| Appendix 8.0 | Pretreatment Building |
| Appendix 8.0, §8.1 | Process Flow Diagrams |
| Appendix 8.0, §8.2 | Piping and Instrumentation Diagrams |
| Appendix 8.0, §8.3 | System Description Documentation (RESERVED) |
| Appendix 8.0, §8.4 | General Arrangement Drawings |
| Appendix 8.0, §8.5 | Civil, Structural, and Architectural Criteria and Typical Design Details |

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| Appendix 8.0, §8.6 | Mechanical Drawings |
| Appendix 8.0, §8.7 | Specifications |
| Appendix 8.0, §8.8 | Engineering Calculations |
| Appendix 8.0, §8.9 | Material Selection and Corrosion Evaluation Documentation |
| Appendix 8.0, §8.10 | Critical Systems Equipment/Instrument List |
| Appendix 8.0, §8.11 | IQRPE Reports |
| Appendix 8.0, §8.12 | Installation Plans (RESERVED) |
| Appendix 8.0, §8.13 | Instrument Control Logic and Narrative Description |
| Appendix 8.0, §8.14 | Descriptions of Instrument Installation and Testing Procedures (RESERVED) |
| Appendix 8.0, §8.15 | Operating Documents (RESERVED) |
| Appendix 9.0 | LAW Building |
| Appendix 9.0, §9.1 | Process Flow Diagrams |
| Appendix 9.0, §9.2 | Piping and Instrumentation Diagrams |
| Appendix 9.0, §9.3 | System Description Documentation (RESERVED) |
| Appendix 9.0, §9.4 | General Arrangement Drawings |
| Appendix 9.0, §9.5 | Civil, Structural, and Architectural Criteria and Typical Design Details |
| Appendix 9.0, §9.6 | Mechanical Drawings |
| Appendix 9.0, §9.7 | Specifications |
| Appendix 9.0, §9.8 | Engineering Calculations |
| Appendix 9.0, §9.9 | Material Selection and Corrosion Evaluation Documentation |
| Appendix 9.0, §9.10 | Critical Systems Equipment /Instrument List |
| Appendix 9.0, §9.11 | IQRPE Reports |
| Appendix 9.0, §9.12 | Installation Plans (RESERVED) |
| Appendix 9.0, §9.13 | Instrument Control Logic, and Narrative Description |
| Appendix 9.0, §9.14 | Descriptions of Instrument Installation and Testing Procedures (RESERVED) |
| Appendix 9.0, §9.15 | Demonstration Test Plan (RESERVED) |
| Appendix 9.0, §9.16 | Demonstration Test Report (RESERVED) |
| Appendix 9.0, §9.17 | Treatment Effectiveness Report (RESERVED) |
| Appendix 9.0, §9.18 | Operating Documents |
| Appendix 10.0 | HLW Building |
| Appendix 10.0, §10.1 | Process Flow Diagrams |
| Appendix 10.0, §10.2 | Piping and Instrumentation Diagrams |
| Appendix 10.0, §10.3 | System Description Documentation (RESERVED) |
| Appendix 10.0, §10.4 | General Arrangement Drawings |
| Appendix 10.0, §10.5 | Civil, Structural, and Architectural Criteria and Typical Design Details |

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| Appendix 10.0, §10.6 | Mechanical Drawings |
| Appendix 10.0, §10.7 | Specifications |
| Appendix 10.0, §10.8 | Engineering Calculations |
| Appendix 10.0, §10.9 | Material Selection and Corrosion Evaluation Documentation |
| Appendix 10.0, §10.10 | Critical Systems Equipment/Instrument List |
| Appendix 10.0, §10.11 | IQRPE Reports |
| Appendix 10.0, §10.12 | Installation Plans (RESERVED) |
| Appendix 10.0, §10.13 | Instrument Control Logic and Narrative Description |
| Appendix 10.0, §10.14 | Descriptions of Instrument Installation and Testing Procedures (RESERVED) |
| Appendix 10.0, §10.15 | Demonstration Test Plan (RESERVED) |
| Appendix 10.0, §10.16 | Demonstration Test Report (RESERVED) |
| Appendix 10.0, §10.17 | Treatment Effectiveness Report (RESERVED) |
| Appendix 10.0, §10.18 | Operating Documents |
| Appendix 11.0 | Laboratory Building |
| Appendix 11.0, §11.1 | Process Flow Diagrams |
| Appendix 11.0, §11.2 | Piping and Instrumentation Diagrams |
| Appendix 11.0, §11.3 | System Description Documentation (RESERVED) |
| Appendix 11.0, §11.4 | General Arrangement Drawings |
| Appendix 11.0, §11.5 | Civil, Structural, and Architectural Criteria and Typical Design Details |
| Appendix 11.0, §11.6 | Mechanical Drawings |
| Appendix 11.0, §11.7 | Specifications (RESERVED) |
| Appendix 11.0, §11.8 | Engineering Calculations |
| Appendix 11.0, §11.9 | Material Selection and Corrosion Evaluation Documentation |
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| Appendix 11.0, §11.12 | Installation Plans (RESERVED) |
| Appendix 11.0, §11.13 | Instrument Control Logic and Narrative Description |
| Appendix 11.0, §11.14 | Descriptions of Instrument Installation and Testing Procedures (RESERVED) |
| Appendix 11.0, §11.15 | Operating Documents (RESERVED) |
| Appendix 12.0 | Balance of Facilities |
| Appendix 12.0, §12.1 | Process Flow Diagrams (RESERVED) |
| Appendix 12.0, §12.2 | Piping and Instrumentation Diagrams (RESERVED) |
| Appendix 12.0, §12.3 | System Description Documentation (RESERVED) |
| Appendix 12.0, §12.4 | General Arrangement Drawings (RESERVED) |

Appendix 12.0, §12.5 Civil, Structural, and Architectural Criteria and Typical Design Details (RESERVED)

Appendix 12.0, §12.6 Mechanical Drawings (RESERVED)

Appendix 12.0, §12.7 Specifications (RESERVED)

Appendix 12.0, §12.8 Engineering Calculations (RESERVED)

Appendix 12.0, §12.9 Material Selection and Corrosion Evaluation Documentation (RESERVED)

Appendix 12.0, §12.10 Critical Systems Equipment/Instrument List (RESERVED)

Appendix 12.0, §12.11 IQRPE Reports (RESERVED)

Appendix 12.0, §12.12 Installation Plans (RESERVED)

Appendix 12.0, §12.13 Instrument Control Logic and Narrative Description (RESERVED)

Appendix 12.0, §12.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)

Appendix 12.0, §12.15 Operating Documents (RESERVED)

## Facility-Specific Definitions

The following definitions are specific to the WTP Unit:

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

**Batch:** refers to waste staged in one DST designated as mixed waste for transfer to the WTP Unit for treatment.

**Continuous monitoring system:** means using a device which continuously samples the regulated 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 of pressure, without interruption, evaluates the detector response at least once every fifteen (15) seconds and computes and records the average value at least every sixty (60) seconds, except during allowable periods of calibration and except as defined otherwise by the CEMS Performance Specifications in 4B and 8A in Appendix B, 40 CFR Part 60. For the parameter pressure, the term "continuous monitoring system" means using a device that continuously samples the pressure without interruption and evaluates the detector response without averaging at least once each second and records the value at least every sixty (60) seconds. In addition, if the AWFCO is engaged due to a pressure exceedance, the pressure value must be recorded.

**Cascade event:** means when additional waste feed cut-off parameter set points deviate outside the limits 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 while waste or waste residues are being managed in HLW and LAW.

**Critical System:** as applied to determining whether a Permit Modification is required, means those specific portions of a TSD unit's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store, or dispose of regulated wastes. A list identifying the critical systems for the WTP is included in Appendix 2.

**Dangerous and/or mixed waste management unit:** means dangerous and/or mixed waste management units, areas, systems, and sub-systems as defined in Permit Tables III.10.D.A, III.10.E.A through D, 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.

**Dioxin/furan" and "dioxins and furans:** means tetra-, penta-, hexa-, hepta-, and octa-chlorinated dibenzo dioxins and furans.

**HLW Vitrification System:** is defined as specified on Permit Tables III.10.J.A and B, and III.10.K.A and B.

**Hourly rolling average or HRA:** will mean the arithmetic mean of the sixty (60) most recent one-minute readings recorded by the continuous monitoring system.

**LAW Vitrification System:** is defined as specified on Permit Tables III.10.H.A and B, and III.10.I.A and B.

**Mode of operation:** means operation of the LAW Vitrification System or the HLW Vitrification System within set limits for each operating parameter specified in Permit Tables III.10.H.D and F (for LAW) and Permit Tables III.10.I.D and F (for HLW).

**One-minute average:** means the average of detector responses calculated at least every sixty (60) seconds from responses obtained at least every fifteen (15) seconds.

**Permittees:** means the United States Department of Energy (owner/operator) and Bechtel National, Inc. (Co-operator).

**Pretreatment Plant Miscellaneous Unit Systems:** is defined as specified on Permit Tables III.10.G.A and B.

**Primary sump:** means any pit or reservoir that meets the WAC 173-303-040 definition of "tank," and those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, deliberately introduced (e.g., from decontamination or treatment activities), for transport to TSD facilities.

**Rolling average:** means the average of all one-minute averages over the averaging period.

**Secondary sump:** means any pit or reservoir that meets the WAC 173-303-040 definition of "tank," and those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, not deliberately introduced (e.g., from spills, leaks, or overflows), for transport to TSD facilities.

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

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

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

**TEQ or "toxic equivalents":** refer to the sum of the weighted potencies of 7 polychlorinated dibenso-p –dioxins (PCDDs), 10 polychlorinated dibensofurans (PCDFs), and 12 dioxin-like (coplanar) polychlorinated biphenyl (PCBs), relative to a reference compound, 2, 3, 7, 8 – tetrachlorodibenzo-p-dioxin (2, 3, 7, 8 –TCDD).

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

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

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

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

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

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

## FACILITY-SPECIFIC ACRONYMS

The following acronyms are specific to the WTP Unit:

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| AWFCO | Automatic Waste Feed Cut-off |
| CDR | Construction Deficiency Report |
| CEMS | Continuous Emissions Monitoring System |
| CMS | Continuous Monitoring System |
| CNP | Cesium Nitric Acid Recovery Process System |
| CRP | Cesium Resin Addition Process System |
| CPE | Cathodic Protection Electrical System |
| CXP | Cesium Ion Exchange Process System |
| DFETP | Dioxin and Furan Emission Test Plan |
| DRE | Destruction and Removal Efficiency |
| Dscf | Dry standard cubic feet |
| ERP | Emergency Response Plan |
| FEP | Waste Feed Evaporation Process System |
| FRP | Waste Feed Receipt Process System |
| HCP | HLW Concentrate Receipt Process System |
| HDH | HLW Canister Decontamination Handling System |
| HEH | HLW Canister Export Handling System |
| HEME | High Efficiency Mist Eliminator |
| HEPA | High Efficiency Particulate Air Filter |
| HFH | HLW Filter Cave Handling System |
| HFP | HLW Melter Feed Process System |
| HLP | HLW Lag Storage and Feed Blending Process System |
| HLW | High-level Waste |

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| HMH | HLW Melter Handling System |
| HMP | HLW Melter Process System |
| HOP | HLW Vit Primary Offgas Treatment System |
| HPH | HLW Canister Pour Handling System |
| HSH | HLW Melter Cave Support Handling System |
| IHLW | Immobilized High-Level Waste (Glass) |
| ILAW | Immobilized Low-Activity Waste (Glass) |
| IQRPE | Independent, qualified, registered, professional engineer |
| LAB | WTP Laboratory Building |
| LAW | Low Activity Waste |
| LCP | LAW Concentrate Receipt Process System |
| LEH | LAW Container Export Handling System |
| LFH | LAW Canister Finishing Handling System |
| LFP | LAW Melter Feed Process System |
| LMH | LAW Melter Handling System |
| LMP | LAW Melter Process System |
| LOP | LAW Primary Offgas Process System |
| LPH | LAW Container Pour Handling System |
| LSH | LAW Melter Equipment Support Handling System |
| LSM | Locally Shielded Melter |
| LVP | LAW Secondary Offgas/Vessel Vent Process System |
| NCR | Nonconformance Report |
| PFH | Pretreatment Filter Cave Handling System |
| PIH | Pretreatment In-Cell Handling System |
| PJV | Pulse Jet Ventilation System |
| PODC | Principal Organic Dangerous Constituents |
| PTF | Pretreatment Building |
| PVP | Pretreatment Vessel Vent Process System |
| PVV | Process Vessel Vent System |
| PWD | Plant Wash and Disposal System |
| RDP | Spent Resin and Dewatering Process System |
| RDTP | Revised Demonstration Test Plan |
| RLD | Radioactive Liquid Waste Disposal System |
| RPP-WTP | River Protection Project-Waste Treatment Plant |
| RWH | Radioactive Solid Waste Handling System |

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|---|---|
| SBS | Submerged Bed Scrubber |
| TCP | Treated LAW Evaporation Process System |
| TLP | Treated LAW Evaporation System |
| TOC | Total Organic Carbon |
| TXP | Technetium Ion Exchange Process System |
| TEP | Technetium Eluant Recovery Process System |
| UFP | Ultrafiltration Process System |
| WESP | Wet Electrostatic Precipitator |
| WTP | River Protection Project – Waste Treatment and Immobilization Project (also known as the Waste Treatment Plant and Vitrification Plant) |
| 6% Mo | Six Percent Molybdenum Alloy |
| 304L | ASTM A240 Grade 304L Stainless Steel |
| 316L | ASTM A240 Grade 316L Stainless Steel |

## III.10.A COMPLIANCE WITH APPROVED PERMIT

## III.10.B STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS

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

## III.10.C UNIT-SPECIFIC CONDITIONS FOR THE WTP UNIT

### III.10.C.1 RESERVED

### III.10.C.2 General Waste Management

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

**III.10.C.2.a.i** The Permittee has received a Permit modification approval pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g., and

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

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

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

**III.10.C.2.c** All dangerous and/or mixed waste must be managed only in areas authorized for dangerous and/or mixed waste management under the Permit conditions, except as allowed under WAC 173-303-200.

The authorized dangerous and/or mixed waste management areas of the WTP Unit are specified in Conditions III.10.D through III.10.K.

**III.10.C.2.d** Dangerous and/or mixed waste may be transferred from dangerous waste management units within the WTP operating unit to an on-site dangerous waste management unit or an off-site permitted TSD Facility using the manifest/tracking system required by permit condition II.N.

**III.10.C.2.e** Permit modifications pursuant to this Permit for dangerous and/or mixed waste at the request of the Permittees must be done according to the three tiered modification system specified in WAC 173-303-830(4) and Condition I.C.3. The Permit modification request must include page changes to the Permit, attachments, and permit application supporting documentation necessary to incorporate the proposed permit modification.

**III.10.C.2.f** In addition to other requirements in WAC 173-303-830, within forty-five (45) days of a permit change (i.e., permit modification) being put into effect or approved, the Permittees will provide copies of the Permit attachments to incorporate the change (if not already reflected in the change pages submitted in the original permit modification request). This submittal does not require re-certification in accordance with WAC 173-303-810(13).

**III.10.C.2.g** Permit modifications pursuant to Operating Unit Group 10, Appendix 1.0 will be prepared and issued pursuant to WAC 173-303-830(3)(a)(ii) and WAC 173-303-840.

**III.10.C.2.h** The Permittees must complete Compliance Schedule interim requirements as specified in Operating Unit Group 10, Appendix 1.0. If an interim requirement is not completed as specified, the Permittees will, within 14 days, notify Ecology in writing of its non-compliance. The notification will include the following:

**III.10.C.2.h.i** A description of any portion of the interim requirement completed;

**III.10.C.2.h.ii** Summaries of any problems affecting timely completion of the interim requirement;

**III.10.C.2.h.iii** A description of the plans for completing the remaining portion of the interim requirement, including any alternatives;

**III.10.C.2.h.iv** Projected interim requirement completion date.

**III.10.C.2.i** RESERVED

**III.10.C.2.j** RESERVED

**III.10.C.2.k** RESERVED

**III.10.C.2.l** During demonstration testing of the LAW Vitrification System and HLW Vitrification System, pursuant to Permit Sections III.10.H. and J., processing of materials in the LAW and HLW Vitrification Systems that would designate as dangerous waste are fully subject to the requirements of this Permit, excluding the melter feed system as identified in Tables III.10.H.A. and III.10.J.A., respectively. This exclusion does not apply to mixed waste.

**III.10.C.2.m** The Facility Owner will ensure WTP input is provided to the risk budget tool developed in accordance with permit condition III.11.I.5.

**III.10.C.2.n** The Permittees will submit the following reports, based on the August 2006 mass balance submitted to Ecology (DOE Letter 06-ESQ-081), for Ecology's review and comment/resolution. Updated information to the August 2006 Mass Balance may be used if available and mutually agreed upon by the Permittees and Ecology.

The reports will describe all of the treatment approaches identified in Permit Conditions III.10.C.2.n.i through III.10.C.2.n.v, and will be included in the administrative record.

**III.10.C.2.n.i** By June 30, 2010, the Permittees will perform an assessment that projects mixed waste constituents and the concentrations that are expected to be contained in each secondary mixed waste stream anticipated to be generated;

**III.10.C.2.n.ii** By June 30, 2010, the Permittees will identify appropriate LDR treatment standards for each mixed waste stream identified in Permit Condition III.10.C.2.n.i;

**III.10.C.2.n.iii** By June 30, 2010, the Permittees will identify which mixed waste streams that, from a qualitative risk perspective, reasonably may cause or may significantly contribute to an exceedance of applicable environmental standards at a disposal facility; and

**III.10.C.2.n.iv** By June 30, 2010, the Permittees will, for the mixed waste streams identified in Permit Condition III.10.C.2.n.iii, identify potential treatment approaches that mitigate their environmental impacts;

**III.10.C.2.n.v** By December 31, 2015 or 12 months prior to cold commissioning of the facility producing the waste, whichever is earlier, the Permittees will, for the mixed waste streams identified in Permit Condition III.10.C.2.n.iii, select appropriate treatment approaches that mitigate their environmental impacts.

**III.10.C.2.o** The Facility owner will evaluate all waste streams generated at the WTP for potential exceedances of applicable environmental standards and will ensure all mixed and dangerous waste streams generated at the WTP will not cause an exceedance of applicable environmental standards at an appropriate disposal facility on-site and is subject to the following requirements:

**III.10.C.2.o.i** ILAW glass will be engineered to be compliant with the disposal facility Waste Acceptance Criteria (WAC). The waste feed and ILAW glass recipes will be verified to be compliant with the permitted glass formulations (including planning for pertinent operating parameters) prior to vitrification.

**III.10.C.2.o.ii** Treatment methods for secondary waste streams projected to be generated by the WTP that are slated for disposal at the Hanford Site will be engineered to ensure that treated secondary wastes will comply with the on-site disposal facility WAC and applicable LDRs prior to generation. Prior to treatment, secondary wastes must be evaluated to ensure that selected treatment methods are still appropriate and continue to comply with the on-site disposal facility WAC and applicable LDRs; and

**III.10.C.2.o.iii** On a case-by-case basis, for any WTP mixed waste that does not meet the WAC for the disposal facility, Ecology will approve or deny acceptance of that waste into the disposal facility. This decision will be based on the disposal facility's WAC and compliance with WAC 173-303-140.

**III.10.C.3 Waste Analysis**

**III.10.C.3.a** RESERVED

**III.10.C.3.b** RESERVED

**III.10.C.3.c** The Permittees are responsible for obtaining accurate information for each waste stream. Inaccurate waste analysis information provided by the generating site (or unit) is not a defense for noncompliance by the Permittees with conditions of this Permit.

**III.10.C.3.d** Records and results of waste analyses conducted under the WAP will be maintained in accordance with Permit Condition II.I.1.

The WTP Unit operating record will include, but not be limited to, information requirements for monitoring in Permit Conditions I.F.1, I.F.2, and I.F.3.

**III.10.C.3.e** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology for review and approval a revised WAP and Quality Assurance Project Plan (QAPP) pursuant to Conditions III.10.C.2.e and III.10.C.2.f, and the Compliance Schedule in Operating Unit Group 10, Appendix 1.0. The revised WAP and QAPP will include:

**III.10.C.3.e.i** All the elements listed in WAC 173-303-300(5), and Permit Condition II.D.1.

**III.10.C.3.e.ii** Requirements that characterization will be performed on the waste feed prior to transfer to the WTP Unit in conformance with the regulatory data quality objectives identified in the Regulatory Data Quality Objective (DQO) Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0 ), or any other parameters, and the rational for selecting these parameters. Requirements that the following analyses, at a minimum, will be conducted on each new batch prior to waste transfer to the WTP Unit, in accordance with the methods under WAC 173-303-110: Ammonia, pH, metals, organic acids, mercury, cyanide, volatiles, semi-volatiles, PCBs/pesticides, anions, TOC, and compatibility (ASTM Method D5058-90). For the purposes of this Permit Condition, a "new batch" is one that has been sampled and analyzed in accordance with the Regulatory DQO Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0 ), and has received no further additions. Further additions require the Permittees to resample and reanalyze, unless an exception is approved by Ecology on a case-by-case basis. Only mixed waste meeting the definition of "new batch", or granted an exception as discussed above, are authorized for transfer to the WTP Unit. Water additions for the purposes of waste transfer are not considered additions for the purposes of this Permit Condition.

**III.10.C.3.e.iii** Identify and include operating parameters to be monitored/controlled and limitations for these parameters for pre-process, in-process, and post-process operations addressing on a unit specific basis treatment effectiveness, as specified in Tables III.10.E.E through H, III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C, waste compatibility, safe operation, and compatibility with unit materials of construction. Amend the sampling, analysis, and QA/QC procedures to include these parameters and the monitoring frequency**.**

**III.10.C.3.e.iv** Requirements that the Permittees will, for Type I (primary) sumps if liquids are detected, and for Type II (secondary) sumps, as defined in Operating Unit Group 10, Addendum C, if liquid levels are outside normal operating parameters, either collect the liquid and return to the treatment process, or designate the sump contents for proper management and disposal prior to removal.

**III.10.C.3.e.v** For ILAW containers and IHLW canisters, a description of the procedures used for removal of mixed dangerous waste from exterior container surfaces, including a description of how contamination removal will be measured.

**III.10.C.3.e.vi** Requirement that wastes generated at the WTP Unit meet the receiving authorized TSD facility waste acceptance criteria prior to a waste stream transfer.

**III.10.C.3.e.vii** The frequency with which analysis of each waste will be reviewed, or repeated, to ensure that the analysis is accurate and current, including requirements and criteria for reevaluation of the sampling and analysis frequency for all waste streams.

**III.10.C.3.e.viii** Documentation demonstrating methods for obtaining samples of wastes are representative as discussed in WAC 173-303-110(2).

**III.10.C.3.e.ix** Where applicable, the methods for meeting the additional waste analysis requirements for specific waste management methods, as specified in WAC 173-303-140(4), 173-303-395(1), 173-303-630 through 173-303-695.

**III.10.C.3.e.x** For waste transferred from other permitted TSDs, the procedures for confirming that each dangerous waste received matches the identity of the waste specified on the accompanying waste profile documentation. This includes the procedure for identifying each waste movement at the Facility.

### III.10.C.4 Recordkeeping

**III.10.C.4.a** The unit specific portion of the Hanford Facility Operating Record will include the documentation specified in Permit Attachment 6, Permit Condition II.I, (applicable to the WTP Unit), and other documentation specified in Operating Unit Group 10. Permit Attachment 6 provides a list of required records, and the methods of submittal for the facility and each unit group.

### III.10.C.5 Procedure to Prevent Hazards

**III.10.C.5.a** The Permittees will design, construct, and operate the WTP Unit in compliance with Operating Unit Group 10, Addendum E, Section 6.1.

**III.10.C.5.b** The WTP Unit fire protection systems will be constructed to the applicable codes listed in Operating Unit Group 10, Addendum E, Section 6.3.1.4. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update Operating Unit Group 10, Addendum E, Sections 6.3, 6.4, and 6.5 to be consistent with design details, and resubmit for approval as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Operating Unit Group 10, Appendix 1.0. In addition to the stand-by diesel generator for the LAW and HLW melters, updated Section 6.4.4. will include descriptions of the essential loads and critical systems supplied with back-up, un-interruptible, and standby power.

**III.10.C.5.c** The Permittees will inspect the WTP Unit to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health. Inspections must be conducted in accordance with the WTP Unit Inspection Schedule, Operating Unit Group 10, Addendum E, Section 6.2, and Addendum E1. Prior to the receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update and resubmit to Ecology for review and approval Addendum E, Section 6.2 and the Inspection Schedule in Addendum E1 as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit Group 10, Appendix 1.0. The revised schedule will include, but not be limited to the requirements in WAC 173-303-320(2) and III.10.C.5.c.i. through v. below.

**III.10.C.5.c.i** Detailed dangerous and/or mixed waste management unit specific and general inspection schedules and description of procedures pursuant to WAC 173-303-395(1)(d), 173-303-630(6), 173-303-640(4)(a)(i) and (6), 173-303-670(7)(b) in accordance with 173-303-680(3), and 173-303-695. The inspection schedule will be presented in the form

of a table that includes a description of the inspection requirements, inspection frequency, and types of problems to look for during the inspections.

**III.10.C.5.c.ii** The proposed locations (scaled drawing with layout) and capabilities of camera(s) (i.e., zoom angles, field of view, etc.) to be used for remote inspections.

**III.10.C.5.c.iii** Schedule and program description for performing integrity assessments as specified in Permit Conditions III.10.E.9.e.i., III.10.G.10.e.i., III.10.H.5.e.i., III.10.I.1.a.v., III.10.J.5.e.i., and III.10.K.1.a.v.

**III.10.C.5.c.iv** Inspection schedules for leak detection system and control instrumentation to include, but not limited to, valves pressure devices, flow devices, measuring devices, as specified in Permit Conditions III.10.E.9.e.xi, III.10.F.3.c, and III.10.G.10.e.xii, and Permit Conditions III.10.H.5.f.xvi, and III.10.J.5.f.xvi.

**III.10.C.5.c.v** Inspection schedule will include inspections for all dangerous and/or mixed waste management units specified in Permit Sections III.10.D, E, F, G, H, I, J, and K.

**III.10.C.5.d** The Permittees will equip the WTP Unit with the equipment specified in Operating Unit Group 10, Addendum E, as required by Permit Condition II.B.1.

**III.10.C.5.e** The Permittees will test and maintain the equipment specified in Operating Unit Group 10, Addendums E and E1, as necessary, to assure proper operation in the event of emergency.

**III.10.C.5.f** The Permittees will maintain access to communications or alarms as provided in the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendum F1 and Permit Condition II.B.2.

**III.10.C.6 Contingency Plan**

**III.10.C.6.a** The Permittees will immediately carry out applicable provisions of Permit Condition II.A.1 and the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendum F1 whenever there is a release of dangerous and/or mixed waste or dangerous waste constituents, or other emergency circumstance, any of which threatens human health or the environment.

**III.10.C.6.b** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update the Contingency Plan and the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendums F and F1, to be consistent with design details and WAC 173-303-350(3), incorporated by reference, and resubmit as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, , in compliance with WAC 173-303-350(5)(c), and Operating Unit Group 10, Appendix 1.0.

**III.10.C.6.c** After initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will review and amend, if necessary, the applicable portions of the Contingency Plan and the *RPP-WTP Emergency Response Plan*, Operating Unit Group 10, Addendums F and F1 in accordance with the provision of WAC 173-303-350(5). The Addendums F and F1 will be amended as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

**III.10.C.6.d** RESERVED

**III.10.C.6.e** RESERVED

**III.10.C.7 Personnel Training**

**III.10.C.7.a** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update and resubmit, to Ecology for review and approval, the Training

Program description in Operating Unit Group 10, Addendum G as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit Group 10, Appendix 1.0. The revised Training Program description will include but not be limited to:

**III.10.C.7.a.i** Detailed unit specific and general Training Program descriptions) as required to demonstrate compliance with WAC 173-303-330 and to include:

**III.10.C.7.a.i.A** Job titles and descriptions for each dangerous waste management position (e.g. waste designator, waste operator, laboratory technician, etc.);

**III.10.C.7.a.i.B** Outline of the training program updated to discuss initial, refresher, and on-the-job training; correlated to each dangerous waste management position;

**III.10.C.7.a.i.C** Table G-1 in Operating Unit Group 10, Addendum G, updated to include the type and amount of introductory, refresher, and on-the-job training required for each dangerous waste management position [WAC 173-303-806(4)(a)(xii)].

**III.10.C.7.a.ii** Sufficient detail to document that the training and qualification program for all categories of personnel whose activities may reasonably be expected to directly affect emissions from the LAW and HLW Systems, except control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(ii), and for control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(i) and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi) [WAC 173-303-680(2)].

**III.10.C.7.b** The Permittees will ensure that the LAW and HLW Systems are operated and maintained, at all times, by persons who are trained and qualified to perform these and any other duties that may reasonably be expected to directly affect emissions from the LAW and HLW Systems [WAC 173-303-680(2)].

**III.10.C.7.c** The Permittees will conduct personnel training in accordance with the approved description of the WTP Dangerous Waste Training Plan, Operating Unit Group 10, Addendum G, pursuant to WAC 173-303-330. The Permittees will maintain documents in accordance with Permit Condition II.C.1 and WAC 173-303-330(2) and (3).

**III.10.C.7.d** RESERVED.

**III.10.C.7.e** The Permittees will submit, under separate cover, the actual detailed WTP Dangerous Waste Training Plan in accordance with the Compliance Schedule in Operating Unit Group 10, Appendix 1.0. The WTP Dangerous Waste Training Plan will be reviewed for compliance with the outline of the training program in Operating Unit Group 10, Addendum G and requirements of WAC 173-303-330. The Training Plan will be incorporated into the Administrative Record.

**III.10.C.8** **Closure**

**III.10.C.8.a** The Permittees must conduct closure of the WTP Unit according to the Closure Plan in Operating Unit Group 10, Addendum H, and Permit Condition III.10.C.8. The closure plan will be modified according to provisions of Permit Condition I.C.3.

**III.10.C.8.b** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update and resubmit the Closure Plan, Operating Unit Group 10, Addendum H for approval as a permit modification pursuant to Permit Condition III.10.C.2.g., to be consistent with design details and schedule described in Operating Unit Group 10, Appendix 1.0. The updated Closure Plan must be consistent with the closure performance standards specified in WAC 173-303-610(2)(a)-(b), WAC 173-340 and, in

addition for Containment Buildings, consistent with 40 CFR 264.1102(b) as referenced by WAC 173-303-695.

**III.10.C.8.c** The Permittees will submit, for Ecology review and approval, an update to the Closure Plan, Operating Unit Group 10, Addendum H, including all documentation required by Permit Condition II.D, within one hundred eighty (180) days prior to commencing partial closure, as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

**III.10.C.8.d** One hundred eighty (180) days prior to commencing final closure of Operating Unit Group 10, the Permittees must submit to Ecology, for review and approval, a revised Closure Plan, including all documentation required by Permit Condition II.D, as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

**III.10.C.8.e** RESERVED

**III.10.C.8.f** To achieve clean closure, the Permittees will remove dangerous waste, dangerous waste constituents, and dangerous waste residues throughout the closing unit and throughout any areas affected by releases from the closing unit to concentrations that do not exceed numeric cleanup levels determined using residential exposure assumptions according to the Model Toxics Control Act (MTCA) Regulations, Chapter 173-340 WAC and all structures, equipment, bases, liners, and other materials containing or contaminated with dangerous waste, constituents, or residues have met specific waste removal and decontamination standards approved by Ecology, in accordance with WAC 173-303-610(2)(b)(i)-(ii).

**III.10.C.8.g** RESERVED.

**III.10.C.8.h** Documentation supporting the independent registered professional engineer's certification of closure must be submitted to Ecology with the closure certification required by WAC 173-303-610(6). In addition to the items in Operating Unit Group 10, Addendum H, the documentation must include the following and other information Ecology may request.

**III.10.C.8.h.i** Sampling procedures that were followed;

**III.10.C.8.h.ii** Soil and concrete locations that were sampled;

**III.10.C.8.h.iii** Sample labeling and handling procedures that were followed, including chain of custody procedures;

**III.10.C.8.h.iv** Description of procedures that were followed to decontaminate concrete or metal to meet the clean closure standards approved by Ecology, in accordance with the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents, or to achieve a "clean debris surface" as specified in 40 CFR 268.45, Table 1, concrete surfaces, as incorporated by reference in WAC 173-303-140. [WAC 173-303-610(2)(b)(ii)].

**III.10.C.8.h.v** Laboratory and field data, including supporting QA/QC summary;

**III.10.C.8.h.vi** Report that summarizes closure activities;

**III.10.C.8.h.vii** Copy of all field notes taken by the independent registered professional engineer; and

**III.10.C.8.h.viii** Copy of all contamination survey results.

### III.10.C.9 Critical Systems

**III.10.C.9.a** The WTP Unit critical systems, as defined in the definition section of Operating Unit 10 and are identified in Operating Unit Group 10, Appendix 2.0.

**III.10.C.9.b** As the design proceeds, Ecology will modify this Permit for reasons described in the WAC 173-303-830(3) to add additional systems to the Critical Systems in Operating Unit Group 10, Appendix 2.0.

**III.10.C.9.c** The Permittees will conduct all construction subject to this Permit in accordance with the approved designs, plans, and specifications that are required by this Permit, except as specified in Conditions III.10.C.9.d. or III.10.C.9.e. For purposes of Conditions III.10.C.9.d. and III.10.C.9.e., the Ecology representative will be an Ecology construction inspector, project manager, or other designated representative of Ecology.

**III.10.C.9.d** The Permittees will submit a nonconformance report (NCR) or construction deficiency report (CDR) to the Ecology representative (s), as applicable, within seven (7) calendar days of the Permittees becoming aware of incorporation of minor nonconformance or construction deficiency from the approved designs, plans, and specifications into the construction of critical systems, as defined in the Hanford Site-wide Permit definition section. Such minor nonconformance or construction deficiency will be defined, for the purposes of this Permit Condition, as nonconformance or construction deficiency that is necessary to accommodate proper construction and the substitution or the use of equivalent or superior materials or equipment that do not substantially alter the Permit conditions or reduce the capacity of the facility to protect human health or the environment. Such minor nonconformance or construction deficiency will not be considered a modification of this Permit. If Ecology determines that the nonconformance or construction deficiency is not minor, it will notify the Permittees in writing that a permit modification is required for the deviation and whether prior approval is required from Ecology before work proceeds which affect the nonconforming or construction deficiency item.

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

**III.10.C.9.f** For each Critical System identified in Operating Unit Group 10, Appendix 2.0, the Permittees will submit to Ecology for review and approval, following the schedule in Operating Unit Group 10, Appendix 1.0, the information identified in Permit Conditions 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. Information Ecology determines to incorporate into the Permit will follow the Permit Condition III.10.C.2.g. process, unless stated otherwise within the specific permit condition.

Information Ecology determines necessary to support design basis will be incorporated into the Administrative Record.

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

**III.10.C.9.h** The Permittees will formally document changes to approved designs, plans, and specifications with design change documentation [e.g., Design Change Notice (DCN), Field Change Request (FCR), Field Change Notice (FCN), Specification Change Notice (SCN), and Supplier Deviation Disposition Request (SDDR)]. All design change documentation will be maintained in the WTP Unit-specific Operating Record and will be made available to Ecology upon request or during the course of an inspection. For any design change documentation affecting any critical systems, the Permittees will provide copies to Ecology within seven (7) calendar days. Identification of critical systems will be included by the Permittees in each WTP Unit-specific dangerous waste permit application, closure plan, or permit modification, as appropriate. If Ecology determines that the design change is not minor, it will notify the Permittees in writing that a permit modification is required for the design change and whether prior approval is required from Ecology before work affected by the design change may proceed.

**III.10.C.9.i** Ventilation system duct work is not required to be doubly contained within the WTP Unit. However, upon discovery of accumulation of liquids within the duct work, a compliance plan will be submitted within sixty (60) days of discovery to correct the problem.

### III.10.C.10 Equivalent Materials

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

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

### III.10.C.11 Risk Assessment

**III.10.C.11.a** The Permittees will submit a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., in accordance with Operating Unit Group 10, Appendix 1.0, to Ecology to incorporate revisions to the "Environmental Risk

Assessment Work Plan, Appendix 6.1. The revised document will be submitted for incorporation into Appendix 6.2 as the Final Risk Assessment Workplan. The Permittee will make revisions in consultation with Ecology to address the comments documented in Operating Unit Group 10, Appendix 6.1 and updated to address the following:

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

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

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

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

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

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

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

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

**III.10.C.11.b** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit for Ecology review and approval as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., a Pre-Demonstration Test Risk Assessment Report as Appendix 6.3. The Pre-Demonstration Test Risk Assessment Report will address and include the following:

**III.10.C.11.b.i** Direct and indirect human health and ecological risk assessments performed pursuant to the Final Risk Assessment Work Plan in Permit Condition III.10.C.11.a.

**III.10.C.11.b.ii** Submittal of projected stack emissions data for Tables III.10.G.D., III.10.H.E., and III.10.J.E. and;

**III.10.C.11.b.iii** Submittal of the Basis and Assumptions (for incorporation into Appendix 6.3.1) for these emissions, including but not limited to, projected operating conditions, feed-rates, and treatment effectiveness, consistent with information provided and approved pursuant to Permit Conditions III.10.G.6., III.10.G.10., III.10.H.1., III.10.H.5., III.10.J.1., and III.10.J.5.

**III.10.C.11.c** Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted pursuant to Permit Condition III.10.H.3.d.i, the Permittees will submit a Final Risk Assessment Report as Operating Unit Group 10, Appendix 6.4, incorporating the emission test results from the Demonstration Report(s). The Final Risk Assessment Report will be prepared in accordance with the Final Risk Assessment Work Plan in Appendix 6.2, (as approved pursuant to Permit Condition III.10.C.11.a), except the following updates are hereby incorporated. The Permittees will also submit with this Final Risk Assessment Report, Permit Tables III.10.G.D. and III.10.I.E. and Operating Unit Group 10, Appendix 6.4.1 (Basis and Assumptions) updated to incorporate the

emissions data from this Final Risk Assessment Report(s), as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f.

**III.10.C.11.c.i** Toxicity data current at the time of the submittal;

**III.10.C.11.c.ii** Compounds newly identified or updated emissions data from current waste characterization and emission testing;

**III.10.C.11.c.iii** Air modeling updated to include stack gas parameters based on most current emissions testing;

**III.10.C.11.c.iv** Physical/transport properties of constituents current at the time of the submittal;

**III.10.C.11.c.v** Update of receptor locations based on land use or land use zoning changes, if any;

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

**III.10.C.11.c.vii** Emissions data and all supporting calculations based on current WTP Unit; and

**III.10.C.11.c.viii** Data from final risk assessment report pursuant to Permit Condition III.10.C.11.d, if available first, or simultaneously.

**III.10.C.11.d** Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted pursuant to Permit Condition III.10.J.3.d.i, the Permittees will submit a Final Risk Assessment Report as Operating Unit Group 10, Appendix 6.4, incorporating the emission test results from the Demonstration Report(s). The Final Risk Assessment Report will be prepared in accordance with the Final Risk Assessment Work Plan in Appendix 6.2, (as approved by Ecology pursuant to Permit Condition III.10.C.11.a), except the following updates are hereby incorporated. The Permittees will also submit with this Final Risk Assessment Report, Permit Tables III.10.G.D. and III.10.K.E. and Operating Unit Group 10, Appendix 6.4.1 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk Assessment Report, as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f.

**III.10.C.11.d.i** Toxicity data current at the time of the submittal;

**III.10.C.11.d.ii** Compounds newly identified or updated emissions data from current waste characterization and emission testing;

**III.10.C.11.d.iii** Air modeling updated to include stack gas parameters based on most current emissions testing;

**III.10.C.11.d.iv** Physical/transport properties of constituents current at the time of the submittal;

**III.10.C.11.d.v** Update of receptor locations based on land use or land use zoning changes, if any;

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

**III.10.C.11.d.vii** Emissions data and all supporting calculations based on current WTP Unit; and

**III.10.C.11.d.viii** Data from final risk assessment report pursuant to Permit Condition III.10.C.11.c, if available first, or simultaneously.

**III.10.C.11.e** The Final Risk Assessment Report(s) required by Permit Conditions III.10.C.11.c. and III.10.C.11.d. may be combined, or provided separately, as appropriate.

**III.10.C.12 RESERVED**

**III.10.C.13 Remote Data Access**

Onsite, unrestricted, twenty-four (24) hour access to key WTP Unit operating data and emissions monitoring data will be provided to Ecology. This onsite, unrestricted access will include providing and maintaining for Ecology only use a computer terminal and printer with access to key WTP Unit operating data bases and emissions monitoring data bases. This terminal will be equipped with all necessary software and hardware to monitor, retrieve, and trend this data. Additional remote access will be provided on Ecology request if security concerns can be addressed.

**III.10.C.14 Interim Period of Operation during Post Demonstration Test Period prior to receiving Ecology approval of the complete Demonstration Test Reports and the Final Risk Assessment Report.**

**III.10.C.14.a** During this Interim Period of Operation, the Permittees are authorized to treat dangerous waste and mixed waste feed meeting the waste acceptance criteria of the Waste Analysis Plan in Addendum B, subject to the following conditions:

**III.10.C.14.a.i** Obtain receipt of Ecology's approval for the LAW Vitrification System according to Permit condition III.10.H.3.d.iii., prior to receiving dangerous or mixed waste feed into the LAW Vitrification System

**III.10.C.14.a.ii** Obtain receipt of Ecology's approval for the HLW Vitrification System according to Permit condition III.10.J.3.d.iii., prior to receiving dangerous or mixed waste feed into the HLW Vitrification System

**III.10.C.14.a.iii** Accept and treat up to 3 million gallons of Hanford tank waste feed in WTP.

**III.10.C.15 Support Systems**

**III.10.C.15.a** Mechanical Handling Systems

**III.10.C.15.a.i** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., in accordance with the Compliance Schedule, as specified in Operating Unit Group 10, Appendix 1.0, engineering information as specified below, for incorporation into Appendices 9.6, 9.10, 10.6, and 10.10, or into the Administrative Record where noted.

A. System Descriptions for each Mechanical Handling system identified in Permit Table III.10.C.A, for incorporation into the Administrative Record (Compliance Schedule Item 36).

B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the following pieces of equipment (Compliance Schedule Item 37):

a. HDH-CRN-00005
b. HEH-CRN-00003
c. HPH-CRN-00001
d. HPH-CRN-00002
e. HSH-CRN-00001
f. HSH-CRN-00014
g. LEH-CRN-00003
h. LPH-CRN-00002
i. HEH-CRN-00001

C. Permit condition III.10.C.15.a. does not require:

a. Additional submittals beyond those described in permit condition III.10.C.15.a.;

b. IQRPE reports for equipment identified in III.10.C.15.a.i (B);

c. Installation inspections for equipment identified in III.10.C.15.a.i(B); and

d. Other inspection, verification, operability, maintenance, or records management beyond that which is specified elsewhere in this permit, for equipment identified in III.10.C.15.a.i (B), or by conditions III.10.C.15.a.ii and III.10.C.15.a.iii.

**III.10.C.15.a.ii** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, engineering information as identified below for incorporation into Appendices 9.13, 9.18, 10.13, and 10.18.

A. Equipment instrument logic narrative description related to safe operation of equipment covered by III.10.C.15.a.i.B, including but not limited to allowed travel path for bridge and trolley, upper and lower hook travel limits, two-blocking prevention, hook load limits, wire rope misreeling, and overspeed protection (Compliance Schedule Item 38).

B. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to ensure equipment covered by III.10.C.15.a.i.B will be operated in a safe and reliable manner that will not result in damage to regulated tank systems, miscellaneous unit systems, or canisters of vitrified waste (Compliance Schedule Item 39).

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

| **Tables 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 |

## III.10.D CONTAINERS

### III.10.D.1 Container Storage Areas and Storage Limits

**III.10.D.1.a** The Permittees may store dangerous and/or mixed waste meeting the waste acceptance criteria for containerized waste in the WAP, Operating Unit Group 10, Addendum B, (as approved pursuant to Permit Conditions III.10.C.3. and III.10.C.2), for storage in dangerous and/or mixed waste container storage units identified in Tables III.10.D.A through C.

**III.10.D.1.b** The Permittees may store containerized dangerous and mixed waste only in container storage areas listed in Permit Tables III.10.D.A (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with Permit Section III.10.D, and in accordance with Operating Unit Group 10, Chapters 1.0 and 4.0, and Appendices 9.4, 9.5, 9.7, 9.8, 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 approved pursuant to Permit Conditions III.10.D.10.b. through d. The Permittees will limit the total volume of waste to quantities specified for the individual container storage areas listed in Permit Table III.10.D.A.

**III.10.D.1.c** The Permittees must maintain a free volume (i.e., free volume = total capacity of containment system minus volume occupied by equipment and containers within containment systems) within containment systems identified in Permit Tables III.10.D.B and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), equal to ten percent (10%) of the total volume of dangerous and mixed waste stored within the containment system, or the volume of the largest container stored within the containment system, whichever is greater.

**III.10.D.1.d** The Permittees will maintain documentation in the operating record for each container storage area listed in Permit Table III.10.D.A (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with WAC 173-303-380.

**III.10.D.1.e** For the purpose of determining compliance with container storage area capacity limits and containment system requirements, every waste container will be considered to be full.

**III.10.D.1.f** RESERVED

### III.10.D.2 Container Storage Areas Design and Construction

**III.10.D.2.a** The Permittees will construct container storage areas identified in Permit Tables III.10.D.A through III.10.D.C, as specified in all applicable drawings and specifications

in Operating Unit Group 10, Appendices 9.4, 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, as approved pursuant to Permit Condition III.10.D.10.b.

**III.10.D.2.b** RESERVED

**III.10.D.2.c** All container storage areas identified in Permit Tables III.10.D.A through III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), must be constructed to protect containers from contact with accumulated liquids (e.g., leaks, spills, precipitation, fire water, liquids from damaged or broken pipes) [WAC 173-303-630(7)(a)(i) and WAC 173-303-630(7)(c)(ii)].

**III.10.D.2.d** Modifications to approved design, plans, and specifications for the container storage areas identified in Permit Tables III.10.D.A through III.10.D.C must be made in accordance with Permit Conditions III.10.C.2.e., f., and g, or III.10.C.9.d, e., and h.

**III.10.D.3 Container Storage Area Installation**

**III.10.D.3.a** RESERVED

**III.10.D.3.b** The Permittees will obtain and place in the WTP Unit operating record, within thirty (30) days of completion of each container storage area identified in Permit Tables III.10.D.A, through III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), written statements by a qualified, installation inspector or a qualified registered, professional engineer, attesting that these areas were installed in compliance with WAC 173-303-630(7)(a), (b), and (c) [WAC 173-303-630(7), WAC 173-303-806(4)(b)(i)].

**III.10.D.4 Container Management Practices**

**III.10.D.4.a** RESERVED

**III.10.D.4.b** The Permittees will manage all waste in container storage areas identified in Permit Tables III.10.D.A through III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with procedures described in Operating Unit Group 10, Addendum C, Appendices 9.18, 10.18, and 12.15, as approved pursuant to Permit Condition III.10.D.10.c, and the following conditions:

**III.10.D.4.b.i** The operating records and waste tracking procedures will indicate all times at which containerized dangerous and mixed waste were removed from and returned to designated staging, storage, segregation, and treatment areas as approved pursuant to Permit Condition III.10.D.10.c.vi. (WAC 173-303-380).

**III.10.D.4.b.ii** The physical arrangement (i.e., spacing) of dangerous and mixed waste containers will be as specified in WAC 173-303-630(5)(c), except for the immobilized LAW containers and IHLW waste canisters, which must be as described in Operating Unit Group 10, Addendum C, Section 4.2.1.2.1., as updated pursuant to Permit Condition III.10.D.10.c.i.

**III.10.D.4.b.iii** All container storage areas must be operated to protect containers from contact with accumulated liquids resulting from leaks, spills, or precipitation [WAC 173-303-630(7)(a)(i) and (c)(ii)].

**III.10.D.4.b.iv** At all times, the Permittees will place and store ignitable and/or reactive dangerous and/or mixed waste in accordance with the procedures described in Operating Unit

Group 10, Appendix 8.15, 9.18, 10.18, 11.15 and 12.15, as approved pursuant to Permit Condition III.10.D.10.c.xi.

**III.10.D.4.b.v** At all times, the Permittees will place and store incompatible dangerous and/or mixed waste in accordance with the procedures described in Operating Unit Group 10, Appendix 8.15, 9.18, 10.18, 11.15, and 12.15, as approved pursuant to Permit Condition III.10.D.10.c.xii.

**III.10.D.4.b.vi** At all times, storage containers holding dangerous and/or mixed waste that contain free liquids and/or exhibit either the characteristic of ignitability or reactivity as described in WAC 173-303-090(5) or (7), must be provided with a containment system in accordance with WAC 173-303-630(7)(a)(i) through (iii) [WAC 173-303-630(7)(c)].

**III.10.D.4.b.vii** At all times, containers holding dangerous and/or mixed waste in container storage areas must be closed, except when it is necessary to add or remove waste [WAC 173-303-630(5)(a)].

**III.10.D.4.b.viii** At all times, containers holding dangerous and/or mixed waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak [WAC 173-303-630(5)(b)].

**III.10.D.4.b.ix** A storage container holding a dangerous and/or mixed waste that is incompatible, as defined in WAC 173-303-040, with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other waste or materials or protected from them by means of a dike, berm, or wall. [WAC 173-303-630(9)(c)].

**III.10.D.4.b.x** If a container holding dangerous and/or mixed waste is not in good condition (e.g., exhibits severe rusting, apparent structural defects, or any other condition that could lead to container rupture or leakage) or is leaking, the Permittees will manage the container in accordance with procedures described in Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, 11.15, and 12.15, as approved pursuant to Permit Condition III.10.D.10.c.viii. [WAC 173-303-630(2)].

**III.10.D.4.b.xi** RESERVED

**III.10.D.4.b.xii** The Permittees will ensure that all containers used for dangerous and/or mixed waste management, are made of or lined with materials which will not react with and are otherwise compatible with the waste to be stored [WAC 173-303-630(4)].

**III.10.D.4.b.xiii** Except for lab packs assembled in compliance with WAC 173-303-161 requirements, the Permittees will not place incompatible wastes, or incompatible wastes and materials, in the same container, unless WAC 173-303-395(1)(b) is complied with [WAC 173-303-630(9)(a)].

**III.10.D.4.b.xiv** The Permittees will not place dangerous and/or mixed waste in an unwashed container that previously held an incompatible waste or material [WAC 173-303-630(9)(b)].

### III.10.D.5 Identification of Containers and Container Storage Areas

**III.10.D.5.a** Pursuant to WAC 173-303-630(3), the Permittees will ensure that all dangerous and/or mixed waste containers (except as otherwise specified in Operating Unit Group 10, Addendum C, Section 4.2.1.3., as updated pursuant to Permit Condition III.10.D.10.c.i., for containers of ILAW and IHLW) are labeled in a manner that adequately identifies the

major risk(s) associated with the contents. For purposes of container labeling, major risk(s) could include but are not limited to the following:

**III.10.D.5.a.i** PERSISTENT (if a WP01 or WP02 waste code);

**III.10.D.5.a.ii** TOXIC (if a WT01, WT02, or D waste code other than D001, D002, or D003);

**III.10.D.5.a.iii** IGNITABILITY (if a D001 and other waste codes);

**III.10.D.5.a.iv** CORROSIVE (if a D002 and other waste codes);

**III.10.D.5.a.v** REACTIVE (if a D003 and other waste codes).

**III.10.D.5.b** For all dangerous and mixed waste containers (except as otherwise specified in Operating Unit Group 10, Addendum C, Section 4.2.1.3., as updated pursuant to Permit Condition III.10.D.10.c.i., for containers of ILAW and canisters of IHLW), the Permittees will ensure that:

**III.10.D.5.b.i** Labels are not obscured or otherwise unreadable;

**III.10.D.5.b.ii** Waste containers are oriented so as to allow inspection of the labels identified in Permit Conditions III.10.D.5.a and III.10.D.5.b, the container tracking number, and, to the extent possible, any labels which the generator placed upon the container; and

**III.10.D.5.b.iii** Empty dangerous and mixed waste containers, as defined by WAC 173-303-160(2), must have their dangerous and/or mixed waste labels destroyed or otherwise removed immediately upon being rendered empty.

**III.10.D.5.c** The Permittees will post entrances and access points to all ILAW containers and IHLW canister storage areas, and any other areas where containers of ILAW and IHLW are handled, with signs that, in addition to meeting the requirements of WAC 173-303-310(2)(a), clearly identify the major risk(s) associated with the containers of ILAW and IHLW.

**III.10.D.6** **Containment Systems**

**III.10.D.6.a** Containerized dangerous and mixed waste, and other materials that are incompatible, will not be staged, segregated, or stored within the same containment system as identified in Permit Table III.10.D.C., as approved/modified pursuant to Permit Condition III.10.D.10. (e.g., metal pan, concrete berm, portable containment system) [WAC 173-303-630(9)(c)].

**III.10.D.6.b** The integrity of containment systems identified in Permit Table III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.) must be maintained so that cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of containment pads, joints in containment pads, berms, curbs, trenches, sumps, and coatings are repaired in accordance with Operating Unit Group 10, Addendum E, as approved/modified pursuant to Permit Conditions III.10.D.10.c.vii., III.10.C.5.b., and III.10.C.5.c. [WAC 173-303-320, WAC 173-303-630(7)(a)(i)].

**III.10.D.6.c** An impermeable coating, as specified in Operating Unit Group 10, Appendices 9.4, 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 will be maintained for all concrete containment systems and will meet the following performance standards [WAC 173-303-630(7)(a)]:

**III.10.D.6.c.i** The coating must seal the containment system surface such that no cracks, seams, or other pathways through which liquid could migrate are present;

**III.10.D.6.c.ii** The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical

damage to the coating or lining can be identified and remedied before waste could migrate from the containment system; and

**III.10.D.6.c.iii** The coating must be compatible with the waste managed in the containment system.

**III.10.D.6.d** The Permittees must inspect all containment systems specified in Permit Table III.10.D.C in accordance with the inspection schedules and requirements in Operating Unit Group 10, Addendum E, as approved/modified pursuant to Permit Conditions III.10.D.10.c.vii. and III.10.C.5.c, and take the following actions if liquid is detected in these containment systems:

**III.10.D.6.d.i** Remove the liquid from the containment system in accordance with procedures described in Operating Unit Group 10, Addendum E, (as modified pursuant to Permit Conditions III.10.C.5.b. and III.10.C.5.c.), Permit Condition III.10.C.6.a., and Operating Unit Group 10, Addendum F1 (as modified pursuant to Permit Condition III.10.C.6.b. and III.10.C.6.c.). The liquid removed from containment systems will be managed as dangerous and/or mixed waste, except for liquids from the Non-Radioactive Dangerous Waste Container Storage Area which will be managed as dangerous waste, unless the Permittees demonstrate through designation, (in accordance with WAC 173-303-070, incorporated by reference), that the liquid is no longer dangerous.

**III.10.D.6.d.ii** Determine the source of the liquid.

**III.10.D.6.d.iii** If the source of the liquid is determined to be a leak in a container, the Permittees must follow the procedures specified in Permit Condition III.10.D.4.b.x.

**III.10.D.6.d.iv** The Permittees must take action to ensure the incident that caused liquid to enter the containment system will not reoccur.

**III.10.D.6.d.v** The Permittees will document in the WTP Unit operating record actions/procedures taken to comply with i. through iv. above in accordance with WAC 173-303-630(6).

**III.10.D.6.d.vi** The Permittees will notify and report releases to the environment to Ecology in accordance with Permit Condition III.10.C.6.a.

**III.10.D.7 Inspections**

**III.10.D.7.a** The Permittees will inspect the container storage areas in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E of this Permit, as modified pursuant to Permit Condition III.10.C.5.c.

**III.10.D.7.b** The inspection data for the container storage areas will be recorded, and the records will be placed in the WTP Unit operating record in accordance with Permit Condition III.10.C.4.

**III.10.D.8 Recordkeeping (WAC 173-303-380)**

For the container storage areas, the Permittees will record and maintain in the WTP Unit operating record, all monitoring, recording, maintenance, calibration, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Condition III.10.C.4. and III.10.C.5.

**III.10.D.9 Closure**

The Permittees will close the container storage areas identified in Permit Tables III.10.D.A through III.10.D.C in accordance with Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

**III.10.D.10 Compliance Schedules**

**III.10.D.10.a** All information identified for submittal to Ecology in III.10.D.10.b. through III.10.D.10.d. of this compliance schedule must be signed in accordance with requirements in WAC 173-303-810(12).

**III.10.D.10.b** The Permittees will submit to Ecology, consistent with the schedule described in Operating Unit Group 10, Appendix 1.0, for review and approval, prior to construction of container storage area and associated containment systems as identified in Permit Tables III.10.D.A and III.10.D.B respectively, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 9.4, 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 of this Permit. In order to incorporate engineering information specified below into Operating Unit Group 10, Appendices 9.4, 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 Condition III.10.C.2.g. process will be followed. At a minimum, container storage area and containment system drawings and specifications will show the following pursuant to WAC 173-303-806(4)(b):

**III.10.D.10.b.i** Design drawings (General Arrangement Drawings - in plan ) and specifications including references to specific building codes (e.g., UBC, ASCE) for each container storage areas' foundation and associated containment system. These items should show basic design parameters and dimensions, and location of the container storage areas and associated containment systems; how containment system design promotes positive drainage control (such as a locked drainage valve) to prevent release of contaminated liquids and so that uncontaminated liquids can be drained promptly for convenience of operation; capacity of the containment system relative to the volume of the largest container to be stored; how the base underlying the containers is sloped (i.e., floor slopes to sumps) or the containment system is otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or other liquids, or how containers are kept from contact with standing liquids in the containment system (i.e., elevated or are otherwise protected); for container storage areas without associated containment systems, a description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing liquids;

**III.10.D.10.b.ii** Containment systems materials selection documentation (including, but not limited to, materials of construction, coatings and liner materials for concrete portions of containment systems);

**III.10.D.10.b.iii** Sketches, drawings, or data demonstrating compliance with WAC 173-303-630(8) (location of buffer zone and containers holding ignitable or reactive waste) and WAC 173-303-630(9)(c) (location of incompatible waste), where applicable;

**III.10.D.10.b.iv** Submit Permit Table III.10.D.B. completed to provide for all containment systems, the information as specified in each column heading, consistent with information to be provided in III.10.D.10.b.i. through iii. above.

**III.10.D.10.c** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will update and submit to Ecology, consistent with the schedule described in Operating Unit Group 10, Appendix 1.0, for review and approval, the following, as specified below, for incorporation into Operating Unit Group 10, Addendum C, and Appendices 9.18, 10.18, and 12.15, except Permit Condition III.10.D.10.c.vii., which will be incorporated into Operating Unit Group 10, Addendum E. In order to incorporate the following information (specified below) into Operating Unit Group 10, Appendix 9.18, 10.18, and

12.15, Permit Condition III.10.C.2.g. will be followed. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions III.10.D.10.b., III.10.D.10.c., and III.10.D.10.d. as approved by Ecology, and will include at a minimum, the following information as required pursuant to WAC 173-303-630 and WAC 173-303-340:

**III.10.D.10.c.i** Operating Unit Group 10, Addendum C, Narrative Descriptions, updated;

**III.10.D.10.c.ii** Descriptions of procedures for addition and removal of waste from containers;

**III.10.D.10.c.iii** Descriptions of procedures for opening and closing of containers, including any inspections performed prior to opening;

**III.10.D.10.c.iv** Descriptions of procedures for handling and transport of containers within the WTP Unit;

**III.10.D.10.c.v** Description of the tracking system used to track containers throughout the WTP Unit pursuant to WAC 173-303-380. The tracking system, at a minimum, will do the following:

A. Track the location of containers within the WTP Unit;

B. Track which containers have been shipped off-facility and/or off-site, and to where they have been shipped;

C. For containers intended for transport off-site, include information in accordance with the requirements specified in WAC 173-303-190(3)(b);

D. Record the date container is placed in the container storage area;

E. Record the nature of the waste in any given container, including dangerous waste designation codes, any associated land disposal restriction treatment requirements, and the major risk(s) associated with the waste (as described in Permit Conditions III.10.D.5.a. and III.10.D.5.c.).

**III.10.D.10.c.vi** Descriptions of procedures for container spacing, stacking, and labeling pursuant to WAC 173-303-630(3), WAC 173-303-630(5)(c), WAC 173-303-340(3), WAC 173-303-630(6);

**III.10.D.10.c.vii** Descriptions of procedures for investigating container storage areas and investigating and repairing containment systems [WAC 173-303-320, WAC 173-303-630(6)];

**III.10.D.10.c.viii** Descriptions of procedures for responding to damaged (e.g., severe rusting, apparent structural defects) or leaking containers [WAC 173-303-630(2)];

**III.10.D.10.c.ix** Descriptions of operational procedures demonstrating how accumulated liquids can be analyzed and removed from containment systems to prevent overflow [WAC 173-303-806(4)(b)(i)(E)];

**III.10.D.10.c.x** For portable containment systems, vendor information, design drawings, or sketches showing the following information. These items will include as a minimum basic design parameters, dimensions, and materials of construction; how the design promotes positive drainage control (such as a locked drainage valve) to prevent release of contaminated liquids and so that uncontaminated liquids can be drained promptly for convenience of operation; how the base underlying the containers is sloped (i.e., floor slopes to sumps) or the containment system is otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or other liquids, <u>or</u> how containers are kept from contact with standing liquids in the containment system (i.e., elevated or are otherwise protected); and

capacity of the containment system relative to the volume of the largest container to be stored;

**III.10.D.10.c.xi** Where ignitable and reactive waste are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with WAC 173-303-630(8)(a) and (b);

**III.10.D.10.c.xii** Where incompatible waste are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with WAC 173-303-630(9)(a) and (b), and 173-303-395(1)(b) and (c);

**III.10.D.10.c.xiii** Submit Permit Table III.10.D.C completed to provide for all portable containment systems, the information as specified in each column heading, consistent with information to be provided in III.10.D.10.c.i. through xii. above;

**III.10.D.10.c.xiv** Test procedures and results or other documentation or information to show that the waste do not contain free liquids, as applicable.

**III.10.D.10.d** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology, consistent with the schedule described in Operating Unit Group 10, Appendix 1.0, for review and approval, completed Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C, for incorporation into Operating Unit Group 10, Addendum C, and Appendices 9.18, 10.18, and 12.15 of this Permit. In order to incorporate the information into Operating Unit Group 10, Addendum C, and Appendices 9.18, 10.18, and 12.15 of this Permit, Permit Condition III.10.C.2.g. process will be followed.

**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 (Building 32)[f] | 403,947 gal. (54,000 $ft^3$) | RESERVED |
| Lab Waste Management Area (Rooms A-0139, A-0139A/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** | RESERVED | RESERVED |
| 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 |
| ILAW Container Finishing Containment Building | RESERVED | RESERVED |
| L-0109B Swabbing Area Line 2 | RESERVED | RESERVED |
| L-0109C Decontamination Area Line 2 | RESERVED | RESERVED |
| L-0109D Inert Fill Area Line 2 | RESERVED | RESERVED |
| L-0115B Swabbing Area Line 1 | RESERVED | RESERVED |
| L-0115C Decontamination Area Line 1 | RESERVED | RESERVED |
| L-0115D Inert Fill Area Line 1 | RESERVED | RESERVED |
| L-0109E Container Monitoring/Export Area | RESERVED | RESERVED |
| L-0115E Container Monitoring/Export Area | RESERVED | RESERVED |
| 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 | RESERVED | RESERVED |
| L-B013C Melter 1 Pour Cave | RESERVED | RESERVED |
| L-B013B Melter 2 Pour Cave | RESERVED | RESERVED |
| L-B011C Melter 2 Pour Cave | RESERVED | RESERVED |
| L-B011B Future Melter 3 Pour Cave | RESERVED | RESERVED |
| L-B009B Future Melter 3 Pour Cave | RESERVED | RESERVED |
| **ILAW Buffer Container Containment Building** | RESERVED | RESERVED |
| 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:

[a]Capacity is for immobilized glass waste storage.

[b]Capacity is for dangerous and/or mixed waste storage.

[c]All 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).

[d]Gallons converted to cubic feet using a conversion factor of 1 gallon (liquid) x 0.134 = 1ft$^3$ (rounded to the nearest whole number).

[e]Location 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.

[f]The dimension for height (H) is based on the height of the largest waste container stored in the area (i.e., LAW container is 7.5 ft., HLW canister is 15 ft., melters are assumed to be 16 ft., and a B-25 box is 5 ft. – stacked a maximum of two high is 10ft).

**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). |
|---|---|---|---|---|
| Failed Melter Storage Facility (Building 32) | 24590-BOF-P1-32-00001, Rev. 2 | N/A | 45’ x 75” x 16’[b] | 403,947 gal. (54,000 ft$^3$) |

[a]Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

[b]The dimension for height (H) is based on the height of the largest waste container stored in the area (i.e., LAW container is 7.5 ft., HLW canister is 15 ft., melters are assumed to be 16 ft., and a B-25 box is 5 ft. – stacked a maximum of two high is 10 ft).

**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:**

[a] Location 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.

[b]Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

## III.10.E TANK SYSTEMS

### III.10.E.1 Approved Waste and Storage Limits

**III.10.E.1.a** The Permittees may store in tank systems all dangerous and/or mixed waste listed in the Part A Forms, Operating Unit Group 10, Addendum A of this Permit and in accordance with the Waste Analysis Plan, Operating Unit Group 10, Addendum B as approved pursuant to Permit Condition III.10.C.3. of this Permit. Total tank system dangerous and/or mixed waste storage at the Facility will not exceed the volume(s) specified in the Part A Form 3 Permit Application, Addendum A of this permit.

**III.10.E.1.b** The Permittees may store and manage dangerous and/or mixed waste only in approved tank systems listed in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., in accordance with Permit Section III.10.E of this Permit, and in accordance with Operating Unit Group 10, Adendums1.0 and 4.0, and Operating Unit Group 10, Appendices 8.1 through 8.15, 9.1 through 9.14, 9.18, 10.1 through 10.14, 10.18, and 11.1 through 11.15 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b through e. The Permittees will limit the total volume of waste to quantities specified for the individual units listed in Permit Tables III.10.E.A through D, I, K, M, and O.

**III.10.E.1.c** The Permittees will manage ignitable and reactive, and incompatible waste in accordance with WAC 173-303-395(1). Any tank system specified in Permit Tables III.10.E.A through D and III.10.E, I, K, M, and O as approved/modified pursuant to Permit Condition III.10.E.9., in which ignitable, reactive, or incompatible waste are managed will meet the requirements specified in WAC 173-303-640(9) and (10).

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

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new tank system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following tank system components (e.g., the tank, venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)).

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

**III.10.E.1.e** In all future permit submittals, the Permittees will include tank names with the tank designation (e.g., Process Condensate Vessels located in the RLD System are designated V45028A and V45028B, respectively).

### III.10.E.2 Tank System Design and Construction

**III.10.E.2.a** The Permittees will construct the tank systems identified in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., as specified in Operating Unit Group 10, Appendices 8.1 through 8.14, 9.1

through 9.14, 10.1 through 10.14, and 11.1 through 11.14 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b., III.10.E.9.c., and III.10.E.9.d.

**III.10.E.2.b** The Permittees will construct all secondary containment systems identified in Permit Tables III.10.E.A through D, and I through P, as approved/modified pursuant to Permit Condition III.10.E.9., as specified in Operating Unit Group 10, Appendices 8.2, 8.4 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 through 11.15**,** 11.15 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b., III.10.E.9.c., and III.10.E.9.d.

**III.10.E.2.c** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of this Permit for the WTP Unit Tank Systems 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.

**III.10.E.2.d** The Permittees will maintain construction access to the internal portions of installed tanks with pulse jet mixers until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a).

**III.10.E.2.d.i** The Permittees will not install the following tanks in the WTP Unit until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a):

- Plant Wash Vessel, PWD-VSL-00044.
- Acidic Waste Vessel, RLD-VSL-00007.
- Plant Wash and Drains Vessel, RLD-VSL-00008.
- HLW Feed Receipt Vessel, HLP-VSL-00022.
- HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
- HLW Feed Blend Vessel, HLP-VSL-00028.
- Ultrafiltration Feed Preparation Vessels, UFP-VSL-00001A and UFP-VSL-00001B.
- Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.

**III.10.E.2.d.ii** Except where exempted in writing by Ecology on the basis that wear allowance provisions will not be affected, fabrication and assembly of the following tanks and their internal components will be suspended until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a).

- HLW Feed Receipt Vessel, HLP-VSL-00022.
- HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
- HLW Feed Blend Vessel, HLP-VSL-00028.
- Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.

**III.10.E.3 Tank System Installation and Certification**

**III.10.E.3.a** The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

**III.10.E.3.a.i** Weld breaks;

**III.10.E.3.a.ii** Punctures;

**III.10.E.3.a.iii** Scrapes of protective coatings;

**III.10.E.3.a.iv** Cracks;

**III.10.E.3.a.v** Corrosion;

**III.10.E.3.a.vi** Other structural damage or inadequate construction/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use [WAC 173-303-640(3)(c)].

**III.10.E.3.b** For tank systems or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported [WAC 173-303-640(3)(d)].

**III.10.E.3.c** The Permittees must test for tightness all new tanks and ancillary equipment prior to these components being covered, enclosed, or placed into use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed in use [WAC 173-303-640(3)(e)].

**III.10.E.3.d** The Permittees must ensure ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f)].

**III.10.E.3.e** The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit Group 10, Appendices 8.9, 8.11, 9.9, 9.11, 10.9, 10.11, 11.9, and 11.11 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b.i., III.10.E.9.b.iv., III.10.E.9.b.v., 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 III.10.E.9.d.v. or other corrosion protection if the Ecology believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g)].

**III.10.E.3.f** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain, and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), attesting that each tank system and corresponding containment system listed in Permit Tables III.10.E.A through D and III.10.E.I through P, as approved/modified pursuant to Permit Condition III.10.E.9., were properly designed and installed, and that repairs, pursuant to WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) WAC 173-303-640(3)(h)].

**III.10.E.3.g** The independent tank system installation inspection and subsequent written statements will be certified pursuant to Permit Condition III.10.E.1.d., comply with all requirements of WAC 173-303-640(3)(h) and will consider, but not be limited to, the following tank system installation documentation:

**III.10.E.3.g.i** Field installation report with date of installation;

**III.10.E.3.g.ii** Approved welding procedures;

**III.10.E.3.g.iii** Welder qualifications and certification;

**III.10.E.3.g.iv** Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute (API) Standard 620, or Standard 650 as applicable;

**III.10.E.3.g.v** Tester credentials;

**III.10.E.3.g.vi** Field inspector credentials;

**III.10.E.3.g.vii** Field inspector reports;

**III.10.E.3.g.viii** Field waiver reports; and

**III.10.E.3.g.ix** Non-compliance reports and corrective action (including field waiver reports) and repair reports.

**III.10.E.4 Integrity Assessments**

**III.10.E.4.a** The Permittees will ensure periodic integrity assessments are conducted on the WTP Unit Tank Systems listed in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., over the term of this Permit as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit Group 10, Addendum E of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.i. and III.10.C.5.c. Results of the integrity assessments will be included in the WTP Unit operating record until ten (10) years after post-closure, or corrective action is complete and certified, whichever is later.

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

**III.10.E.4.c** The Permittees must immediately and safely remove from service any Tank System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Conditions III.10.E.5.i.i through iv., vi., and vii. The affected tank system or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.E.5.i.v. [WAC 173-303-640(7)(e) and (f), WAC 173-303-640(8)].

**III.10.E.5 Tank Management Practices**

**III.10.E.5.a** No dangerous and/or mixed waste will be managed in the WTP Unit Tank System unless the operating conditions, specified under Permit Condition III.10.E.5 are complied with.

**III.10.E.5.b** The Permittees will install and test all process and leak detection system monitoring/instrumentation, as specified in Permit Tables III.10.E.E through H, as approved/modified pursuant to Permit Condition III.10.E.9., in accordance with Operating 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 11.14 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.ix. and III.10.E.9.d.x.

**III.10.E.5.c** The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials in the WTP Unit Tank System if these substances could cause the tank system to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a)].

**III.10.E.5.d** The Permittees will operate the WTP Unit Tank System to prevent spills and overflows using the description of controls and practices as required under WAC 173-303-640(5)(b) described in Permit Condition III.10.C.5., and Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.iv. [WAC 173-303-640(5)(b), WAC 173-303-806(4)(c)(ix)].

**III.10.E.5.e** For routinely non-accessible WTP Unit Tank Systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.E.9.e.vi., the Permittees will mark all routinely non-accessible tank system access points with labels or signs to identify the waste contained in the tanks. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a legend that identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the tank system(s). 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)].

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

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

**III.10.E.5.h** An impermeable coating, as specified in Operating Unit Group 10, Appendices 8.4, 8.5, 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, 11.5, 11.7, 11.9, 11.11, and 11.12 of this Permit, as approved pursuant to Permit Condition III.10.E.9.b.v., will be maintained for all concrete containment systems and concrete portions of containment systems for each WTP Unit Tank System listed in Permit Tables III.10.E.A through D and I through P, as approved/modified pursuant to Permit Condition III.10.E.9. Concrete containment systems that do not have a liner and have construction joints, must meet the requirements of WAC 173-303-640(4)(e)(ii)(C)

and -806(4)(c)(vii). The coating will prevent migration of any dangerous and/or mixed waste into the concrete. All coatings will meet the following performance standards:

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

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

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

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

**III.10.E.5.i.i** Immediately and safely stop the flow of dangerous and/or mixed waste into the tank system or secondary containment system, in accordance with procedures based on all applicable safety analysis documentation;

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

**III.10.E.5.i.iii** Remove the waste from the secondary containment area pursuant to WAC 173-303-640(7)(b). The waste removed from containment areas of WTP Unit Tank Systems will be managed as dangerous and/or mixed waste;

**III.10.E.5.i.iv** If the cause of the release was a spill that has not damaged the integrity of the tank system, the Permittees may return the tank system to service pursuant to WAC 173-303-640(7)(e)(ii). In such a case, the Permittees will take action to ensure the incident that caused liquid to enter the containment systems of these tank systems will not reoccur [WAC 173-303-320(3);

**III.10.E.5.i.v** If the source of the dangerous waste and/or mixed waste is determined to be a leak from a primary WTP Unit Tank System, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees must comply with the requirements of WAC 173-303-640(7) and take the following actions [WAC 173-303-640(5)(c)]:

A. Close the tank system according to procedures in WAC 173-303-640(7)(e)(i), and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.; or

B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a) as modified pursuant to Permit Condition III.10.E.1.d.) the tank system in accordance with Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.v. before the tank system is placed back into service [WAC 173-303-640(7)(e) and (f), and WAC 173-303-806(4)(c)(vii)];

**III.10.E.5.i.vi** The Permittees will document in the operating record actions/procedures taken to comply with III.10.E.5.i.i. through v. above in accordance with WAC 173-303-640(6)(d);

**III.10.E.5.i.vii** The Permittees will notify and report releases to the environment to Ecology in accordance with WAC 173-303-640(7)(d).

**III.10.E.5.j** 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), WAC 173-303-640(7)(b)(ii), WAC 173-303-806(4)(c)(vii)]:

A. Reasons for delayed removal;

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

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

**III.10.E.5.k** The Permittees will operate the WTP Unit Tank System in accordance with Operating Unit Group 10, Addendum C as updated pursuant to Permit Condition III.10.E.9.e.vi. and Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e., and the following:

**III.10.E.5.k.i** The Permittees will operate the WTP Unit Tank System in order to maintain the systems and process parameters listed in Permit Tables III.10.E.E through H, as approved/modified pursuant to Permit Condition III.10.E.9., within the operating trips and operating ranges specified in Permit Tables III.10.E.E through H, and consistent with assumptions and basis which are reflected in Operating Unit Group 10, Appendix, 6.3.1. as approved pursuant to Permit Condition III.10.C.11.b. [WAC 173-303-815(2)(b)(ii) and WAC 173-303-640(5)(b)]. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d.;

**III.10.E.5.k.ii** The Permittees will calibrate/function test the instruments listed on Permit Tables III.10.E.E through H in accordance with Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.xi.

**III.10.E.5.l** Tank systems that have the potential for formation and accumulation of hydrogen gases must be operated to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.E.5.m** For each tank system holding dangerous waste which are acutely or chronically toxic by inhalation, operate the system to prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)].

### III.10.E.6 Inspections [WAC 173-303-640(6)]

**III.10.E.6.a** The Permittees will inspect the WTP Unit Tank Systems in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified pursuant to Permit Condition III.10.C.5.c.

**III.10.E.6.b** The inspection data for the WTP Unit Tank Systems will be recorded, and the records will be placed in the WTP Unit operating record, in accordance with Permit Condition III.10.C.4.

### III.10.E.7 Recordkeeping (WAC 173-303-380)

For the WTP Unit Tank Systems, the Permittees will record and maintain in the WTP Unit operating record, all monitoring, calibration, recording, 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.

### III.10.E.8 Closure

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

### III.10.E.9 Compliance Schedule

**III.10.E.9.a** All information identified for submittal to Ecology in b. through e. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.E.1.d. [WAC 173-303-806(4)].

**III.10.E.9.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to construction of each secondary containment and leak detection system for the WTP Unit Tank System (per level, per WTP Unit building and outside the WTP Unit buildings) as identified in Permit Tables III.10.E.A through D, J, L, N, and P, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 8.4, 8.5, 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, 10.11, 11.4, 11.5, 11.7, 11.8, 11.9, and 11.11 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

**III.10.E.9.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendices 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. IQRPE Reports will be consistent with the information separately provided in Permit Conditions III.10.E.9.b.ii. through ix. below. The IQRPE Report(s) (specific to foundation, secondary containment and leak detection system) for the LAW and HLW buildings (-21 foot elevation only) will be submitted with the first IQRPE Report for tanks, identified in Permit Condition III.10.E.9.c.i. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.b.ii** Design drawings (General Arrangement Drawings in plan ) and specifications for the foundation, secondary containment, including, liner installation details, and leak

detection methodology [Note: leak detection systems for areas where daily, direct, or remote visual inspection is not feasible, will be continuous in accordance with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f), WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.b.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), WAC 173-303-806(4)(c)(vii)];

**III.10.E.9.b.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

**III.10.E.9.b.v** Secondary containment/foundation and leak detection system materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials as applicable) [WAC 173-303-806(4)(c)(i)];

**III.10.E.9.b.vi** Detailed description of how the secondary containment for each tank system will be installed in compliance with WAC 173-303-640(3)(c) [WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.b.vii** Submit Permit Tables III.10.E.J, L, N, and P, completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in Permit Conditions III.10.E.9.b.i. through vi. above;

**III.10.E.9.b.viii** Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit and in accordance with Appendix 7.15 for incorporation into the Administrative Record [WAC 173-303-340].

**III.10.E.9.b.ix** A detailed description of how tank system design provides access for conducting future tank integrity assessments [WAC 173-303-640(3)(b), WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of each tank as identified in Permit Tables III.10.E.A through D, and I, K, M, and O engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this Permit. Tanks will include primary sumps. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings):

**III.10.E.9.c.i** IQRPE Reports (specific to tanks) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendices 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers.

The IQRPE Reports will be consistent with the information separately provided in Permit Conditions III.10.E.9.c.ii. through xii. below and the IQRPE Report specified in Permit Condition III.10.E.9.b.i. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.c.ii** Design drawings (General Arrangement Drawings in plan , Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], Mechanical Drawings) and specifications, and other information, specific to tanks (to show location and physical attributes of each tank) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i) through (iv)];

**III.10.E.9.c.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the tank(s). Structural support calculations specific to off-specification, non-standard, and field fabricated tanks will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.c.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

**III.10.E.9.c.v** Tank materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.c.vi** Tank vendor information (including, but not limited to required performance warranties, as available), consistent with information submitted under ii. above, will be submitted for incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-806(4)(c)];

**III.10.E.9.c.vii** System Descriptions related to tanks will be submitted for incorporation into the Administrative Record;

**III.10.E.9.c.viii** Mass balance for each projected operating condition, including assumptions and formulas used to complete the mass balance, so that they can be independently verified, and will be submitted for incorporation into the Administrative Record;

**III.10.E.9.c.ix** A detailed description of how the tanks will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e) [WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.c.x** Submit Permit Tables III.10.E.I, K, M, and O, completed to provide for all primary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in Permit Conditions III.10.E.9.c.i. through ix.;

**III.10.E.9.c.xi** Documentation that tanks are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-340];

**III.10.E.9.c.xii** Documentation that tanks are designed to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW limit and in accordance with Appendix 7.15 for incorporation into the Administrative Record [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)];

**III.10.E.9.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of ancillary equipment for each tank system, as identified in Permit Tables III.10.E.A, through D, and I through P, not addressed in Permit Condition III.10.E.9.c.,

engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings):

**III.10.E.9.d.i** IQRPE Reports (specific to ancillary equipment) will include a review of design drawings, calculations, and other information as applicable, on which the certification report is based. The reports will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will be consistent with the information provided separately in Permit Conditions III.10.E.9.d.ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.E.9.b and III.10.E.9.c. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.d.ii** Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], etc.) specifications (including required performance warranties), and other information specific to ancillary equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i), (iii), (iv)];

**III.10.E.9.d.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the ancillary equipment [WAC 173-303-640(3)(a), WAC 173-303-640(3)(f), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.d.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

**III.10.E.9.d.v** Materials selection documentation for ancillary equipment (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

**III.10.E.9.d.vi** Vendor information, consistent with information submitted under ii. above, will be submitted for incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-806(4)(c)];

**III.10.E.9.d.vii** Tank, ancillary equipment, and leak detection system instrument control logic narrative description (e.g., descriptions of fail-safe conditions, etc.);

**III.10.E.9.d.viii** System Descriptions related to ancillary equipment and system descriptions related to leak detection systems, , for incorporation into the Administrative Record;

**III.10.E.9.d.ix** A detailed description of how the ancillary equipment will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), and WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.d.x** For process monitoring, control, and leak detection system instrumentation for the WTP Unit Tank System as identified in Permit Tables III.10.E.E through H, a detailed description of how the process monitoring, control, and leak detection system

instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.d.xi** Mass balance for projected normal operating condition used in developing the process and instrumentation diagrams, including assumptions and formulas used to complete the mass balance, so that they can be independently verified, for incorporation into the Administrative Record;

**III.10.E.9.d.xii** Documentation that ancillary equipment is designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-340].

**III.10.E.9.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.E.9.c.ii. and Permit Conditions III.10.E.9.d.ii., vii., viii. and x. above, will be submitted for incorporation into the Administrative Record.

**III.10.E.9.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit Group 10, Appendices 8.15, 9.18, 10.18, 11.15 of this Permit, except Permit Condition III.10.E.9.e.v., which will be incorporated into Operating Unit Group 10, Addendum E of this Permit. All information provided under this permit condition must be consistent with information provided 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 approved by Ecology.

**III.10.E.9.e.i** Integrity assessment program and schedule for all WTP Unit tanks will address the conducting of periodic integrity assessments on all WTP Unit tanks over the life of the tank, in accordance with III.10.E.9.b.ix. and WAC 173-303-640(3)(b), and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the tank system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), WAC 173-303-806(4)(c)(vi)];

**III.10.E.9.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste, or accumulated liquid in the secondary containment system within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology [WAC 173-303-640(4)(c)(iii), WAC 173-303-806(4)(c)(vii)];

A. Dangerous waste pipe penetrations that require a penetration seal in accordance with the International Building Code (IBC) and DOE-STD-1066, DOE Standard for Fire Protection Design Criteria, or to meet ventilation sealing requirements identified in Table III.10E.Q, are not required to meet the 0.1 gallons per hour within twenty-four (24) hours leak detection rate for those sections of piping that are in contact with approved silicone or equivalent low-permeability seal material.

B. Piping on either side of the penetration seal must meet the requirements of III.10.E.9.e.ii.

C. Revisions (including additions or deletions to Table III.10.E.Q will be submitted to Ecology for review and approval pursuant to Conditions III.10.C.2.e and III.10.C.2.f.

Addition of penetration seal locations to Table III.10.E.Q. will be approved by Ecology prior to installation of the penetration seals.

**Table III.10.E.Q Tank System Penetration Seal Locations**

| Facility | Room No | Orientation | Discipline | Penetration Sequence No |
|---|---|---|---|---|
| Reserved | Reserved | Reserved | Reserved | Reserved |

**III.10.E.9.e.iii** Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(c)(vii)];

**III.10.E.9.e.iv** Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from tanks or containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii) [WAC 173-303-640(5)(b), WAC 173-303-806(4)(c)(ix)];

**III.10.E.9.e.v** Description of procedures for investigation and repair of tank systems [WAC 173-303-320, WAC 173-303-640(6), WAC 173-303-640(7)(e) and (f), WAC 173-303-806(4)(a)(v), WAC 173-303-806(4)(c)(vii)];

**III.10.E.9.e.vi** Updated Addendum C, Narrative Descriptions, Tables and Figures as identified in Permit Tables III.10.E.A through D (as modified pursuant to Permit Condition III.10.E.9.e.xii.) and updated to identify routinely non-accessible tank systems;

**III.10.E.9.e.vii** Description of procedures for management of ignitable and reactive, and incompatible dangerous and/or mixed waste in accordance with WAC 173-303-640(9) and (10) [WAC 173-303-806(4)(c)(x)].

**III.10.E.9.e.viii** A description of the tracking system used to track dangerous and/or mixed waste throughout the WTP Unit Tank System, pursuant to WAC 173-303-380.

**III.10.E.9.e.ix** Permit Tables III.10.E.E through H will be completed for WTP Unit Tank System process and leak detection system monitors and instruments (to include but not limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emission) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b. and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition.

**III.10.E.9.e.x** Supporting documentation for operating trips and expected operating range as specified in Permit Tables III.10.E.E through H as approved pursuant to Permit Condition III.10.E.9.e.ix.

**III.10.E.9.e.xi** Documentation of process and leak detection instruments and monitors (as listed in Permit Tables III.10.E.E through H) for the WTP Unit Tank Systems are to include but not be limited to the following:

A. Procurement specifications.

B. Location used.

C. Range, precision, and accuracy.

D. Detailed descriptions of calibration/functionality test procedures (e.g., method number [ASTM]) or provide a copy of manufacturer's recommended calibration procedures.

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.).

F. Equipment instrument control logic narrative description (e.g., descriptions of failsafe conditions, etc.), as identified in Permit Tables III.10.E.E through H not addressed in Permit Condition III.10.E.9.d.

**III.10.E.9.e.xii** Permit Tables III.10.E.A through D amended as follows:

A. Under column 1, update and complete list of dangerous and/or mixed waste tank systems, including plant items that comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the 'reserved' with the Operating Unit Group 10, Appendices 8.0, 9.0, 10.0, and 11.0, subsections specific to tank systems as listed in column 1.

D. Under column 4, update and complete list of narrative description tables and figures.

E. Under column 5, update and complete maximum capacity, for each tank.

**III.10.E.9.e.xiii** Permit Tables III.10.E.I, K, M, and O amended as follows:

A. Under column 1, replace the 'reserved' with the updated and complete list of sump numbers and room location.

B. Under column 2, replace the 'reserved' with the updated and complete maximum sump capacities in gallons.

C. Under column 3, replace the 'reserved' with the updated and complete sump dimensions and materials of construction.

D. Under column 4, replace the 'reserved' with the updated and complete list of engineering descriptions (drawing numbers, specifications, etc.).

**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) |
|---|---|---|---|---|
| **Waste Feed Receipt Process System**<br><br>FRP-VSL-00002A (Waste Feed Receipt Vessel)<br><br>FRP-VSL-00002B (Waste Feed Receipt Vessel)<br><br>FRP-VSL-00002C (Waste Feed Receipt Vessel)<br><br>FRP-VSL-00002D (Waste Feed Receipt Vessel) | FRP | **24590-PTF**<br>-M2-FRP-P0001, Rev 2<br>-M2-FRP-P0002, Rev 2<br>-M2-FRP-P0003, Rev 2<br>-M2-FRP-P0004, Rev 4<br>-M5-V17T-00003, Rev 2<br>-M6-FRP-00001001, Rev 0<br>-M6-FRP-00001002, Rev 0<br>-M6-FRP-00002001, Rev 0<br>-M6-FRP-00002002, Rev 0<br>-M6-FRP-00003001, Rev 0<br>-M6-FRP-00003002, Rev 0<br>-M6-FRP-00003003, Rev 0<br>-M6-FRP-00003004, Rev 0<br>-M6-FRP-00003005, Rev 0<br>-M6-FRP-00005001, Rev 0<br>-M6-FRP-00005002, Rev 0<br>-M6-FRP-00005003, Rev 0<br>-M6-FRP-00005004, Rev 0<br>-M6-FRP-00005005, Rev 0<br>-M6-FRP-00005006, Rev 0 | 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. | FRP-VSL-00002A = 472,900<br><br>FRP-VSL-00002B = 472,900<br><br>FRP-VSL-00002C = 472,900<br><br>FRP-VSL-00002D = 472,900 |

**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-FRP-00005007, Rev 0<br>-M6-FRP-00005008, Rev 0<br>-M6-FRP-00006001, Rev 0<br>-M6-FRP-00006002, Rev 0<br>-M6-FRP-00006003, Rev 0<br>-M6-FRP-00006004, Rev 0<br>-M6-FRP-00006005, Rev 0<br>-M6-FRP-00006006, Rev 0<br>-M6-FRP-00006007, Rev 0<br>-M6-FRP-00006008, Rev 0<br>-M6-FRP-00007001, Rev 0<br>-M6-FRP-00007002, Rev 0<br>-M6-FRP-00007003, Rev 0<br>-M6-FRP-00007004, Rev 0<br>-M6-FRP-00007005, Rev 0<br>-M6-FRP-00007006, Rev 0<br>-M6-FRP-00007007, Rev 0<br>-M6-FRP-00007008, Rev 0<br>-M6-FRP-00008001, Rev 0<br>-M6-FRP-00008002, Rev 0<br>-M6-FRP-00008003, 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-FRP-00008004, Rev 0<br>-M6-FRP-00008005, Rev 0<br>-M6-FRP-00008006, Rev 0<br>-M6-FRP-00008007, Rev 0<br>-M6-FRP-00009001, Rev 0<br>-M6-FRP-00010001, Rev 0<br>-M6-FRP-00020001, Rev 0<br>-M6-FRP-00020002, Rev 0<br>-M6-FRP-00020003, Rev 0<br>-M6-FRP-00020004, Rev 0<br>-M6-FRP-00020005, Rev 0<br>-M6-FRP-00020006, Rev 0<br>-M6-FRP-00020007, Rev 0<br>-MVD-FRP-00005, Rev 12<br>-MVD-FRP-00006, Rev 12<br>-MVD-FRP-00007, Rev 12<br>-MVD-FRP-00008, Rev 12<br>-N1D-FRP-00001, Rev 7<br>-P1-P01T-00001, Rev 7<br>-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**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Waste Feed Evaporation Process System**<br><br>FEP-VSL-00005 (Waste Feed Evaporator Condensate Vessel)<br><br>FEP-VSL-00017A (Waste Feed Evaporator Feed Vessel)<br><br>FEP-VSL-00017B (Waste Feed Evaporator Feed Vessel) | FEP | **24590-PTF**<br>-3PS-MEVV-T0001, Rev 2<br>-M5-V17T-00004001, Rev 3<br>-M6-FEP-00001001, Rev 1<br>-M6-FEP-00001002, Rev 0<br>-M6-FEP-00001003, Rev 0<br>-M6-FEP-00001004, Rev 0<br>-M6-FEP-00003001, Rev 0<br>-M6-FEP-00003002, Rev 0<br>-M6-FEP-00006001, Rev 1<br>-M6-FEP-00006002, Rev 1<br>-M6-FEP-00006003, Rev 1<br>-M6-FEP-00006004, Rev 1<br>-M6-FEP-00006005, Rev 0<br>-M6-FEP-00007001, Rev 1<br>-M6-FEP-00007002, Rev 1 | Section 4.1.2.2; 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. | FEP-VSL-00005 = 5,022<br><br>FEP-VSL-00017A = 85,496<br><br>FEP-VSL-00017B = 85,496 |

**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-FEP-00007003, Rev 1<br>-M6-FEP-00007004, Rev 1<br>-M6-FEP-00007005, Rev 0<br>-M6-FEP-00008001, Rev 0<br>-M6-FEP-00008002, Rev 0<br>-MVD-FEP-P0001, Rev 2<br>-MVD-FEP-P0002, Rev 2<br>-MVD-FEP-00003, Rev 1<br>-MV-FEP-P0001, Rev 0<br>-MV-FEP-P0002, Rev 0<br>-N1D-FEP-00002, Rev 6<br>-N1D-FEP-P0003, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev. 4<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |

**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) |
|---|---|---|---|---|
| **Ultrafiltration Process System**<br><br>UFP-VSL-00001A (Ultrafiltration Feed Preparation Vessel)<br><br>UFP-VSL-00001B (Ultrafiltration Feed Preparation Vessel)<br><br>UFP-VSL-00002A (Ultrafiltration Feed Vessel)<br><br>UFP-VSL-00002B (Ultrafiltration Feed Vessel)<br><br>UFP-VSL-00062A (Ultrafilter Permeate Collection Vessel)<br><br>UFP-VSL-00062B (Ultrafilter Permeate Collection Vessel)<br><br>UFP-VSL-00062C (Ultrafilter Permeate Collection Vessel) | UFP | **24590-PTF**<br>-M5-V17T-00009, Rev 2<br>-M5-V17T-00011, Rev 2<br>-M6-UFP-00001001, Rev 0<br>-M6-UFP-00001002, Rev 0<br>-M6-UFP-00001003, Rev 0<br>-M6-UFP-00001004, Rev 0<br>-M6-UFP-00001005, Rev 0<br>-M6-UFP-00001006, Rev 0<br>-M6-UFP-00001007, Rev 0<br>-M6-UFP-00002001, Rev 0<br>-M6-UFP-00002002, Rev 0<br>-M6-UFP-00002003, Rev 0<br>-M6-UFP-00002004, Rev 0<br>-M6-UFP-00002005, Rev 0<br>-M6-UFP-00002006, Rev 0<br>-M6-UFP-00002007, Rev 1<br>-M6-UFP-00002008, Rev 0<br>-M6-UFP-00003001, Rev 0<br>-M6-UFP-00003002, Rev 0<br>-M6-UFP-00003003, Rev 0 | Section 4.1.2.3; 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. | UFP-VSL-00001A = 75,594<br><br>UFP-VSL-00001B = 75,594<br><br>UFP-VSL-00002A = 39,629<br><br>UFP-VSL-00002B = 40,378<br><br>UFP-VSL-00062A = 34,700<br><br>UFP-VSL-00062B = 34,700<br><br>UFP-VSL-00062C = 34,700<br><br>UFP-FILT-00001A= 474<br><br>UFP-FILT-00001B = 474<br><br>UPF-FILT-00002A = 474<br><br>UPF-FILT-00002B = 474 |

**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-00001A (Ultrafilter) | | -M6-UFP-00003004, Rev 0 | | |
| | | -M6-UFP-00003005, Rev 0 | | UPF-FILT-00003A = 474 |
| UFP-FILT-00001B (Ultrafilter) | | -M6-UFP-00003006, Rev 0 | | |
| | | -M6-UFP-00003007, Rev 1 | | UPF-FILT-00003B = 474 |
| UFP-FILT-00002A (Ultrafilter) | | -M6-UFP-00003008, Rev 0 | | |
| | | -M6-UFP-00004001, Rev 1 | | UPF-FILT-00004A = 380 |
| UFP-FILT-00002B (Ultrafilter) | | -M6-UFP-00004002, Rev 1 | | |
| | | -M6-UFP-00004003, Rev 1 | | UPF-FILT-00004B = 380 |
| UFP-FILT-00003A (Ultrafilter) | | -M6-UFP-00005001, Rev 0 | | |
| | | -M6-UFP-00005002, Rev 0 | | UPF-FILT-00005A = 380 |
| UFP-FILT-00003B (Ultrafilter) | | -M6-UFP-00005003, Rev 0 | | |
| | | -M6-UFP-00005004, Rev 0 | | UPF-FILT-00005B = 380 |
| UFP-FILT-00004A (Ultrafilter) | | -M6-UFP-00005005, Rev 0 | | |
| | | -M6-UFP-00005006, Rev 0 | | |
| UFP-FILT-00004B (Ultrafilter) | | -M6-UFP-00005007, Rev 0 | | |
| | | -M6-UFP-00006001, Rev 0 | | |
| UFP-FILT-00005A (Ultrafilter) | | -M6-UFP-00006002, Rev 0 | | |
| | | -M6-UFP-00006003, Rev 0 | | |
| UFP-FILT-00005B (Ultrafilter) | | -M6-UFP-00006004, Rev 0 | | |
| | | -M6-UFP-00006005, Rev 0 | | |
| | | -M6-UFP-00006006, 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-00006007, Rev 0<br>-M6-UFP-00007001, Rev 1<br>-M6-UFP-00007002, Rev 1<br>-M6-UFP-00007003, Rev 1<br>-M6-UFP-00007004, Rev 1<br>-M6-UFP-00007005, Rev 1<br>-M6-UFP-00007006, Rev 1<br>-M6-UFP-00007007, Rev 1<br>-M6-UFP-00009001, Rev 0<br>-M6-UFP-00009002, Rev 0<br>-M6-UFP-00009003, Rev 0<br>-M6-UFP-00009004, Rev 0<br>-M6-UFP-00009005, Rev 0<br>-M6-UFP-00009006, Rev 0<br>-M6-UFP-00010001, Rev 0<br>-M6-UFP-00010002, Rev 0<br>-M6-UFP-00010003, Rev 0<br>-M6-UFP-00010004, Rev 0<br>-M6-UFP-00010005, Rev 0<br>-M6-UFP-00010006, Rev 0<br>-M6-UFP-00010007, 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-00011001, Rev 0<br>-M6-UFP-00011002, Rev 0<br>-M6-UFP-00011003, Rev 0<br>-M6-UFP-00011004, Rev 0<br>-M6-UFP-00011005, Rev 0<br>-M6-UFP-00015001, Rev 0<br>-M6-UFP-00015002, Rev 0<br>-M6-UFP-00016001, Rev 0<br>-M6-UFP-00017001, Rev 0<br>-M6-UFP-00021001, Rev 0<br>-M6-UFP-00021002, Rev 0<br>-M6-UFP-00022001, Rev 0<br>-M6-UFP-00022002, Rev 0<br>-M6-UFP-00027001, Rev 0<br>-M6-UFP-00027002, Rev 0<br>-M6-UFP-00027003, Rev 0<br>-M6-UFP-00027004, Rev 0<br>-M6-UFP-00027005, Rev 0<br>-M6-UFP-00027006, Rev 0<br>-M6-UFP-00027007, Rev 0<br>-MLD-UFP-P0007, Rev 1 | | |

**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) |
|---|---|---|---|---|
| | | -MVD-UFP-00001, Rev 12<br>-MVD-UFP-00014, Rev 11<br>-MVD-UFP-00015, Rev 11<br>-MVD-UFP-00002, Rev 12<br>-MVD-UFP-00005. Rev 11<br>-MVD-UFP-00006, Rev 11<br>-MVD-UFP-00007, Rev 11<br>-MV-UFP-00001001, Rev 1<br>-MV-UFP-00001002, Rev 1<br>-MV-UFP-00001003, Rev 1<br>-MV-UFP-00002001, Rev 1<br>-MV-UFP-00002002, Rev 1<br>-MV-UFP-00002003, Rev 1<br>-MV-UFP-00003, Rev 6<br>-MV-UFP-00004, Rev 6<br>-MV-UFP-P0005, Rev 0<br>-MV-UFP-P0006, Rev 0<br>-MV-UFP-P0007, Rev 0<br>-MV-UFP-00016, Rev 3<br>-MV-UFP-00017, Rev 3<br>-MV-UFP-00018, Rev 3 | | |

**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-00028, Rev 1<br>-MV-UFP-00029, Rev 1<br>-MV-UFP-00030, Rev 1<br>-MV-UFP-00031, Rev 1<br>-N1D-UFP-P0001, Rev 2<br>-N1D-UFP-P0002, Rev 2<br>-N1D-UFP-P0003, Rev 5<br>-N1D-UFP-P0004, Rev 3<br>-N1D-UFP-P0005, Rev 2<br>-N1D-UFP-P0008, Rev 2<br>-N1D-UFP-00009, Rev 0<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **HLW Lag Storage and Feed Blending Process System** | HLP | **24590-PTF**<br>-M5-V17T-00007, Rev 2<br>-M5-V17T-00008, Rev 3<br>-M6-HLP-00001001, 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<br><br>HLP-VSL-00027A = 127,260 |

**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) |
|---|---|---|---|---|
| HLP-VSL-00022 (HLW Feed Receipt Vessel)<br><br>HLP-VSL-00027A (HLW Lag Storage Vessel)<br><br>HLP-VSL-00027B (HLW Lag Storage Vessel)<br><br>HLP-VSL-00028 (HLW Feed Blend Vessel) | | -M6-HLP-00001002, Rev 0<br>-M6-HLP-00001003, Rev 1<br>-M6-HLP-00001004, Rev 0<br>-M6-HLP-00002001, Rev 0<br>-M6-HLP-00002002, Rev 1<br>-M6-HLP-00003001, Rev 0<br>-M6-HLP-00003002, Rev 1<br>-M6-HLP-00003003, Rev 1<br>-M6-HLP-00005001, Rev 0<br>-M6-HLP-00005002, Rev 0<br>-M6-HLP-00005003, Rev 0<br>-M6-HLP-00005004, Rev 0<br>-M6-HLP-00005005, Rev 0<br>-M6-HLP-00005006, Rev 0<br>-M6-HLP-00005007, Rev 0<br>-M6-HLP-00006001, Rev 0<br>-M6-HLP-00006002, Rev 0<br>-M6-HLP-00006003, Rev 0<br>-M6-HLP-00006004, Rev 0<br>-M6-HLP-00006005, Rev 0<br>-M6-HLP-00006006, Rev 0 | | HLP-VSL-00027B = 127,260<br><br>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-00006007, Rev 0<br>-M6-HLP-00007001, Rev 0<br>-M6-HLP-00007002, Rev 0<br>-M6-HLP-00007003, Rev 0<br>-M6-HLP-00007004, Rev 0<br>-M6-HLP-00007005, Rev 0<br>-M6-HLP-00007006, Rev 0<br>-M6-HLP-00007007, Rev 0<br>-M6-HLP-00009001, Rev 0<br>-M6-HLP-00009002, Rev 0<br>-M6-HLP-00009003, Rev 0<br>-M6-HLP-00010001, Rev 0<br>-M6-HLP-00010002, Rev 0<br>-M6-HLP-00010003, Rev 0<br>-M6-HLP-00027001, Rev 0<br>-M6-HLP-00027002, Rev 0<br>-M6-HLP-00027003, Rev 0<br>-M6-HLP-00027004, Rev 0<br>-M6-HLP-00027005, Rev 0<br>-M6-HLP-00027006, Rev 0<br>-M6-HLP-00028004, 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-HLP-00028005, Rev 0<br>-M6-HLP-00028006, Rev 0<br>-MVD-HLP-00006, Rev 8<br>-MVD-HLP-00007, Rev 8<br>-MVD-HLP-00008, Rev 9<br>-MVD-HLP-00009, Rev 8<br>-MV-HLP-00003001, Rev 0<br>-MV-HLP-00004, Rev 2<br>-MV-HLP-00005, Rev 2<br>-MV-HLP-00006, Rev 2<br>-N1D-HLP-00001, Rev 6<br>-N1D-HLP-P0003, Rev 1<br>-N1D-HLP-00007, Rev 6<br>-N1D-HLP-00010, Rev 6<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0003, Rev 3 | | |
| **Cesium Ion Exchange Process System** | CXP | **24590-PTF**<br>-M5-V17T-00012001, 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 | CXP-VSL-00004 = 10,633 |

**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) |
|---|---|---|---|---|
| CXP-VSL-00004 (Cesium Ion Exchange Feed<br><br>CXP-VSL-00026A (Cesium Ion Exchange Treated LAW Collection Vessel)<br><br>CXP-VSL-00026B (Cesium Ion Exchange Treated LAW Collection Vessel)<br><br>CXP-VSL-00026C (Cesium Ion Exchange Treated LAW Collection Vessel)<br><br>CXP-IXC-00001 (Cesium Ion Exchange Column)<br><br>CXP-IXC-00002 (Cesium Ion Exchange Column)<br><br>CXP-IXC-00003 (Cesium Ion Exchange Column) | | -M5-V17T-00012002, Rev 0<br>-M5-V17T-00013, Rev 3<br>-M5-V17T-00025, Rev 1<br>-M6-CXP-00001002, Rev 1<br>-M6-CXP-00001003, Rev 1<br>-M6-CXP-00001004, Rev 2<br>-M6-CXP-00001006, Rev 0<br>-M6-CXP-00001007, Rev 0<br>-M6-CXP-00002001, Rev 1<br>-M6-CXP-00002002, Rev 1<br>-M6-CXP-00003001, Rev 1<br>-M6-CXP-00003002, Rev 1<br>-M6-CXP-00003003, Rev 0<br>-M6-CXP-00005001, Rev 1<br>-M6-CXP-00005002, Rev 1<br>-M6-CXP-00005003, Rev 1<br>-M6-CXP-00005004, Rev 0<br>-M6-CXP-00007, Rev 2<br>-M6-CXP-000100001, Rev 0<br>-M6-CXP-000100002, Rev 0<br>-M6-CXP-000100003, Rev 0 | Group 10, Addendum C of this Permit. | CXP-VSL-00026A = 38,000<br><br>CXP-VSL-00026B = 38,000<br><br>CXP-VSL-00026C = 38,000<br><br>CXP-IXC-00001 = 680<br><br>CXP-IXC-00002= 680<br><br>CXP-IXC-00003 = 680<br><br>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) |
|---|---|---|---|---|
| CXP-IXC-00004 (Cesium Ion Exchange Column) | | -M6-CXP-000100004, Rev 0<br>-M6-CXP-00011001, Rev 0<br>-M6-CXP-00011002, Rev 0<br>-M6-CXP-00011003, Rev 0<br>-M6-CXP-00011004, Rev 0<br>-M6-CXP-00011005, Rev 0<br>-M6-CXP-00011006, Rev 0<br>-M6-CXP-00011007, Rev 0<br>-M6-CXP-00012001, Rev 0<br>-M6-CXP-00012002, Rev 0<br>-M6-CXP-00012003, Rev 0<br>-M6-CXP-00012004, Rev 0<br>-M6-CXP-00013, Rev 2<br>-MV-CXP-P0002, Rev 0<br>-MV-CXP-P0008, Rev 0<br>-MV-CXP-P0009, Rev 0<br>-MV-CXP-P0010, Rev 0<br>-MVD-CXP-P0015, Rev 0<br>-MVD-CXP-P0021, Rev 1<br>-MVD-CXP-P0022, Rev 1<br>-MVD-CXP-P0023, Rev 1 | | |

**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-CXP-P0003, Rev 1<br>-N1D-CXP-P0007, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-00002, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Cesium Nitric Acid Recovery Process System**<br><br>CNP-VSL-00001 (Cesium Evaporator Eluant Lute Pot)<br><br>CNP-VSL-00003 (Eluate Contingency Storage Vessel)<br><br>CNP-VSL-00004 (Cesium Evaporator Recovered Nitric Acid Vessel) | CNP | **24590-PTF**<br>-M5-V17T-00014, Rev 2<br>-M6-CNP-00001001, Rev 0<br>-M6-CNP-00001002, Rev. 0<br>-M6-CNP-00001003, Rev. 0<br>-M6-CNP-00002001, Rev 0<br>-M6-CNP-00002002, Rev 0<br>-M6-CNP-00002003, Rev 0<br>-M6-CNP-00003001, Rev 0<br>-M6-CNP-00003002, Rev 0<br>-M6-CNP-00003003, Rev 0<br>-M6-CNP-00003004, Rev 0 | 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<br><br>CNP-VSL-00003 = 21,713<br><br>CNP-VSL-00004 = 11,115 |

**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-CNP-00004, Rev 3<br>-M6-CNP-00005, Rev 2<br>-MV-CNP-P0001, Rev 1<br>-MV-CNP-P0002, Rev 1<br>-MV-CNP-P0005, Rev 0<br>-MVD-CNP-P0003, Rev 1<br>-MVD-CNP-P0007, Rev 2<br>-MVD-CNP-P0010, Rev 0<br>-N1D-CNP-P0006, Rev 3<br>-N1D-CNP-P0009, Rev 1<br>-N1D-CNP-P0011, Rev 1<br>-P1-P01T-00001, Rev 7 | | |
| **Treated LAW Concentrate Storage Process System**<br><br>TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel) | TCP | **24590-PTF**<br>-M5-V17T-00006, Rev 1<br>-M6-TCP-00001001, Rev 0<br>-M6-TCP-00001002, Rev 0<br>-M6-TCP-00001003, Rev 0<br>-M6-TCP-00002001, Rev 1<br>-M6-TCP-00002002, Rev 1<br>-M6-TCP-00002003, Rev 1<br>-M6-TCP-00002004, 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-00002005, Rev 1<br>-MV-TCP-P0002, Rev 1<br>-MVD-TCP-P0002, Rev 2<br>-N1D-TCP-P0001, Rev 2<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Treated LAW Evaporation Process System**<br><br>TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel)<br><br>TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel)<br><br>TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel) | TLP | **24590-PTF**<br>-3PS-MEVV-T0001, Rev 3<br>-M5-V17T-00005, Rev 2<br>-M6-TLP-00001, Rev 3<br>-M6-TLP-00002001, Rev 0<br>-M6-TLP-00002002, Rev 0<br>-M6-TLP-00002003, Rev 0<br>-M6-TLP-00002004, Rev 0<br>-M6-TLP-00003001, Rev 0<br>-M6-TLP-00003002, Rev 0<br>-M6-TLP-00003003, Rev 0 | 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<br><br>TLP-VSL-00009A = 130,010<br><br>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) |
|---|---|---|---|---|
| | | -M6-TLP-00003004, Rev 0<br>-M6-TLP-00005001, Rev 0<br>-M6-TLP-00005002, Rev 0<br>-M6-TLP-00005003, Rev 0<br>-M6-TLP-00005004, Rev 0<br>-M6-TLP-00005005, Rev 0<br>-M6-TLP-00006001, Rev 0<br>-M6-TLP-00006002, Rev 0<br>-M6-TLP-00006003, Rev 0<br>-M6-TLP-00006004, Rev 0<br>-M6-TLP-00006005, Rev 0<br>-MVD-TLP-P0001, Rev 2<br>-MVD-TLP-P0002, Rev 2<br>-MVD-TLP-00004, Rev 1<br>-MV-TLP-P0001, Rev 1<br>-MV-TLP-P0002, Rev 1<br>-N1D-TLP-P0001, Rev 2<br>-N1D-TLP-P0006, Rev 1<br>-P1-P01T-00001, Rev 7<br>-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**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Spent Resin and Dewatering Process System**<br><br>RDP-VSL-00002A (Spent Resin Slurry Vessel)<br><br>RDP-VSL-00002B (Spent Resin Slurry Vessel)<br><br>RDP-VSL-00002C (Spent Resin Slurry Vessel)<br><br>RDP-VSL-00004 (Spent Resin Dewatering Moisture Separation Vessel) | RDP | **24590-PTF**<br>-3PS-MWD0-TP003, Rev 1<br>-M5-V17T-00020, Rev 2<br>-M6-RDP-00001001, Rev 0<br>-M6-RDP-00001002, Rev 0<br>-M6-RDP-00001003, Rev 0<br>-M6-RDP-00001004, Rev 0<br>-M6-RDP-00001005, Rev 0<br>-M6-RDP-00002, Rev 4<br>-M6-RDP-00006, Rev 3<br>-MVD-RDP-P0005, Rev 1<br>-MVD-RDP-P0006, Rev 1<br>-MVD-RDP-P0007, Rev 3<br>-MVD-RDP-P0008, Rev 0<br>-MV-RDP-P0001, Rev 0<br>-MV-RDP-P0002, Rev 0 | 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<br><br>RDP-VSL-00002B = 15,230<br><br>RDP-VSL-00002C = 15,230<br><br>RDP-VSL-00004 = 101 |

**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-RDP-P0003, Rev 0<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Pretreatment Plant Radioactive Liquid Waste Disposal System**<br><br>RLD-TK-00006A (Process Condensate Tank)<br><br>RLD-TK-00006B (Process Condensate Tank)<br><br>RLD-VSL-00017A (Alkaline Effluent Vessel)<br><br>RLD-VSL-00017B (Alkaline Effluent Vessel) | RLD | **24590-PTF**<br>-M5-V17T-00022003, Rev 2<br>-M5-V17T-00022004, Rev 3<br>-M6-RLD-00001001, Rev 0<br>-M6-RLD-00001002, Rev 0<br>-M6-RLD-00001003, Rev 0<br>-M6-RLD-00001004, Rev 0<br>-M6-RLD-00002001, Rev 0<br>-M6-RLD-00002002, Rev 0<br>-M6-RLD-00002003, Rev 0<br>-M6-RLD-00003001, Rev 0<br>-M6-RLD-00003002, Rev 0<br>-M6-RLD-00003003, Rev 0<br>-M6-RLD-00004, Rev 2 | 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. | RLD-TK-00006A = 343,734<br><br>RLD-TK-00006B = 343,734<br><br>RLD-VSL-00017A = 34,340<br><br>RLD-VSL-00017B = 34,340 |

**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-RLD-00005, Rev 3<br>-M6-RLD-00006, Rev 3<br>-M6-RLD-00007001, Rev 0<br>-MVD-RLD-P0005, Rev 3<br>-MVD-RLD-P0006, Rev 3<br>-MV-RLD-P0001, Rev 0<br>-MV-RLD-P0002, Rev 0<br>-N1D-RLD-P0002, Rev 2<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Pretreatment Plant Wash and Disposal System**<br><br>PWD-VSL-00015 (Acidic/Alkaline Effluent Vessel)<br><br>PWD-VSL-00016 (Acidic/Alkaline Effluent Vessel) | PWD | **24590-PTF**<br>-M5-V17T-00022001, Rev 2<br>-M5-V17T-00022002, Rev 2<br>-M6-PWD-00001, Rev 2<br>-M6-PWD-00002001, Rev 0<br>-M6-PWD-00002002, Rev 0<br>-M6-PWD-00003001, Rev 0 | 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. | PWD-VSL-00015 = 119,150<br><br>PWD-VSL-00016 = 119,150<br><br>PWD-VSL-00033 = 41,650<br><br>PWD-VSL-00043 = 41,650 |

**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) |
|---|---|---|---|---|
| PWD-VSL-00033 (Ultimate Overflow Vessel)<br><br>PWD-VSL-00043 (HLW Effluent Transfer Vessel)<br><br>PWD-VSL-00044 (Plant Wash Vessel)<br><br>PWD-VSL-00046 (C3 Floor Drain Collection Vessel) | | -M6-PWD-00003002, Rev 0<br>-M6-PWD-00003003, Rev 0<br>-M6-PWD-00003004, Rev 0<br>-M6-PWD-00005, Rev 3<br>-M6-PWD-00006, Rev 2<br>-M6-PWD-00007, Rev 3<br>-M6-PWD-00008, Rev 3<br>-M6-PWD-00009, Rev 3<br>-M6-PWD-00010, Rev 3<br>-M6-PWD-00011, Rev 2<br>-M6-PWD-00012, Rev 2<br>-M6-PWD-00014, Rev 3<br>-M6-PWD-P0018, Rev 0<br>-M6-PWD-P0019, Rev 0<br>-M6-PWD-00020001, Rev 0<br>-M6-PWD-00020002, Rev 0<br>-M6-PWD-00020003, Rev 0<br>-M6-PWD-00020004, Rev 0<br>-M6-PWD-00020005, Rev 0<br>-M6-PWD-00020006, Rev 0<br>-M6-PWD-00021001, Rev 0 | | PWD-VSL-00044 = 103,024<br><br>PWD-VSL-00046 = 4,982 |

**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-00021002, Rev 0<br>-M6-PWD-00021003, Rev 0<br>-M6-PWD-00021004, Rev 0<br>-M6-PWD-00021005, Rev 0<br>-M6-PWD-00021006, Rev 0<br>-M6-PWD-00023001, Rev 0<br>-M6-PWD-00023002, Rev 0<br>-M6-PWD-00023003, Rev 0<br>-M6-PWD-00023004, Rev 0<br>-M6-PWD-00023005, Rev 0<br>-M6-PWD-00024001, Rev 0<br>-M6-PWD-00024002, Rev 0<br>-M6-PWD-00024003, Rev 0<br>-M6-PWD-00024004, Rev 0<br>-M6-PWD-00024005, Rev 0<br>-M6-PWD-00024006, Rev 0<br>-M6-PWD-00024007, Rev 0<br>-M6-PWD-00025001, Rev 0<br>-M6-PWD-00025002, Rev 0<br>-M6-PWD-00025003, Rev 0<br>-M6-PWD-00025004, 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-PWD-00026, Rev 2<br>-M6-PWD-00029, Rev 3<br>-M6-PWD-00033, Rev 2<br>-M6-PWD-00041, Rev 3<br>-M6-PWD-00043, Rev3<br>-M6-PWD-00044, Rev 3<br>-M6-PWD-00046, Rev 2<br>-M6-PWD-00050, Rev 2<br>-M6-PWD-00051, Rev 2<br>-M6-PWD-00057, Rev 4<br>-M6-PWD-00058, Rev 4<br>-MVD-PWD-P0001, Rev 3<br>-MVD-PWD-P0002, Rev 3<br>-MVD-PWD-P0003, Rev 2<br>-MVD-PWD-P0010, Rev 1<br>-MVD-PWD-P0011, Rev 3<br>-MVD-PWD-P0012, Rev 3<br>-MV-PWD-P0001001, Rev 1<br>-MV-PWD-P0001002, Rev 1<br>-MV-PWD-P0003001 , Rev 1<br>-MV-PWD-P0003002, Rev 1 | | |

**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-PWD-P0005, Rev 1<br>-MV-PWD-P0006, Rev 1<br>-MV-PWD-P0007, Rev 1<br>-MV-PWD-P0010, Rev 1<br>-N1D-PWD-P0001, Rev 1<br>-N1D-PWD-P0002, Rev 5<br>-N1D-PWD-P0003, Rev 3<br>-N1D-PWD-P0005, Rev 2<br>-N1D-PWD-P0006, Rev 2<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-00006, Rev 4 | | |
| **Pretreatment Vessel Vent Process System**<br><br>PVP-VSL-00001 (Vessel Vent HEME Drain Collection Vessel) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021002, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-M6-PVP-00002, Rev 3<br>-M6-PVP-00004001, Rev 0<br>-M6-PVP-00004002, Rev 0<br>-M6-PVP-00017001, Rev 0<br>-M6-PVP-00017002, Rev 0<br>-M6-PVP-00017003, Rev 0 | 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 |

**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-PVP-00018001, Rev 1<br>-M6-PVP-00018002, Rev 0<br>-MVD-PVP-P0001, Rev 0<br>-MV-PVP-P0002, Rev 1<br>-N1D-PVP-P0002, Rev 1<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Pretreatment In-Cell Handling System**<br><br>PIH-TK-00001 (Decontamination Soak Tank) | PIH | **24590-PTF**<br>-M6-PIH-00001001, Rev 0<br>-M6-PIH-00001002, Rev 0<br>-P1-P01T-00001, Rev 7<br>**24590-WTP**<br>-3PS-HD00-T0001, Rev 4 | 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 = 1504 |

**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) |
|---|---|---|---|---|
| **LAW Concentrate Receipt Process System**<br><br>LCP-VSL-00001 (LAW Melter 1 Concentrate Receipt Vessel)<br><br>LCP-VSL-00002 (LAW Melter 2 Concentrate Receipt Vessel) | LCP | **24590-LAW**<br>-M5-V17T-P0001, Rev 0<br>-M5-V17T-P0002, Rev 0<br>-M6-LCP-00001002, Rev 0<br>-M6-LCP-00001003, Rev 0<br>-M6-LCP-00002003, Rev 0<br>-M6-LCP-00002004, Rev 0<br>-MV-LCP-P0001, Rev 0<br>-MV-LCP-P0002, Rev 0<br>-MVD-LCP-P0004, Rev 1<br>-MVD-LCP-P0005, Rev 1<br>-N1D-LCP-P0001, Rev 1<br>-P1-P01T-00002, Rev 7 | 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. | LCP-VSL-00001 = 18,130<br><br>LCP-VSL-00002 = 18,130 |
| **LAW Melter Feed Process System**<br><br>LFP-VSL-00001 (Melter 1 Feed Preparation Vessel)<br><br>LFP-VSL-00002 (Melter 1 Feed Vessel) | LFP | **24590-LAW**<br>-M5-V17T-P0001, Rev 0<br>-M5-V17T-P0002, Rev 0<br>-M6-LFP-00001001, Rev 0<br>-M6-LFP-00001002, Rev 0<br>-M6-LFP-00001003, Rev 0<br>-M6-LFP-00001004, Rev 0 | 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. | LFP-VSL-00001 = 9,123<br><br>LFP-VSL-00002 = 9,123<br><br>LFP-VSL-00003 = 9,123<br><br>LFP-VSL-00004 = 9,123 |

**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) |
|---|---|---|---|---|
| LFP-VSL-00003 (Melter 2 Feed Preparation Vessel)<br><br>LFP-VSL-00004 (Melter 2 Feed Vessel) | | -M6-LFP-00001005, Rev 0<br>-M6-LFP-00001006, Rev 0<br>-M6-LFP-00003001, Rev 0<br>-M6-LFP-00003002, Rev 0<br>-M6-LFP-00003003, Rev 0<br>-M6-LFP-00003004, Rev 0<br>-M6-LFP-00003005, Rev 0<br>-M6-LFP-00003006, Rev 0<br>-MV-LFP-P0001, Rev 0<br>-MV-LFP-P0002, Rev 0<br>-MV-LFP-P0004, Rev 0<br>-MV-LFP-P0005, Rev 0<br>-MVD-LFP-P0007, Rev 1<br>-MVD-LFP-P0008, Rev 1<br>-MVD-LFP-P0010, Rev 1<br>-MVD-LFP-P0011, Rev 1<br>-P1-P01T-00002, Rev 7<br>-N1D-LFP-00004, Rev 2<br>-N1D-LFP-00006, Rev 0 | | |

**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) |
|---|---|---|---|---|
| **LAW Secondary Off-gas/Vessel Vent Process System**<br><br>LVP-TK-00001 (LAW Caustic Collection Tank) | LVP | **24590-LAW**<br>-M5-V17T-P0011, Rev 1<br>-P1-P01T-00004, Rev 5<br>-VDCN-M-13-00001<br>-MTD-LVP-00001, Rev 1<br>-N1D-LVP-00002, Rev 2 | 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. | LVP-TK-00001= 14,232 |
| **LAW Primary Off-gas Process System**<br><br>LOP-VSL-00001 (LAW Melter 1 SBS Condensate Vessel)<br><br>LOP-VSL-00002 (LAW Melter 2 SBS Condensate Vessel) | LOP | **24590-LAW**<br>-M5-V17T-P0007, Rev 0<br>-M5-V17T-P0008, Rev 0<br>-M6-LOP-P0001, Rev 2<br>-M6-LOP-P0002, Rev2<br>-MV-LOP-P0001, Rev 0<br>-MV-LOP-P0002, Rev 0<br>-MVD-LOP-P0004, Rev 1<br>-MVD-LOP-P0005, Rev 1<br>-N1D-LOP-00002, Rev 3<br>-P1-P01T-00002, Rev 7 | 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. | LOP-VSL-00001 = 9,056<br><br>LOP-VSL-00002 = 9,056 |
| **LAW Vitrification Plant Radioactive Liquid Waste Disposal System** | RLD | **24590-LAW**<br>-M5-V17T-P0014, Rev 2<br>-M6-RLD-00001001, Rev 0 | 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. | RLD-VSL-00003 = 25,780 |

**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) |
|---|---|---|---|---|
| RLD-VSL-00003 (Plant Wash Vessel)<br><br>RLD-VSL-00004 (C3/C5 Drains/Sump Collection Vessel)<br><br>RLD-VSL-00005 (SBS Condensate Collection Vessel) | | -M6-RLD-00001002, Rev 0<br>-M6-RLD-00001003, Rev 0<br>-M6-RLD-00001004, Rev 0<br>-M6-RLD-00001005, Rev 0<br>-M6-RLD-00001006, Rev 0<br>-M6-RLD-00002001, Rev 0<br>-M6-RLD-00002002, Rev 0<br>-M6-RLD-00002003, Rev 0<br>-M6-RLD-00002004, Rev 0<br>-M6-RLD-00002005, Rev 0<br>-M6-RLD-00003001, Rev 0<br>-M6-RLD-00003002, Rev 1<br>-M6-RLD-00003003, Rev 1<br>-MVD-RLD-P0001, Rev 1<br>-MVD-RLD-P0006, Rev 2<br>-MVD-RLD-P0007, Rev 2<br>-MV-RLD-P0001, Rev 2<br>-MV-RLD-P0002, Rev 1<br>-MV-RLD-P0003, Rev 1<br>-P1-P01T-00001, Rev 4 | | RLD-VSL-00004 = 7696<br><br>RLD-VSL-00005 = 25,780 |

**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) |
|---|---|---|---|---|
| | | -P1-P01T-00002, Rev 7<br>-N1D-RLD-00001, Rev 5<br>-N1D-RLD-00002, Rev 3<br>-N1D-RLD-00005, Rev 4 | | |

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**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) |
|---|---|---|---|---|
| **HLW Concentrate Receipt Process System**<br><br>The HCP System has ancillary equipment only | HCP | **24590-HLW**<br>-M5-V17T-00001, Rev 5<br>-M6-HCP-00001001, Rev 1<br>-M6-HCP-00002001, Rev 1 | 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. | |
| **HLW Melter Feed Process System**<br><br>HFP-VSL-00001 (Melter 1 Feed Preparation Vessel) | HFP | **24590-HLW**<br>-3YD-HFP-00001[a]<br>-M5-V17T-00001, Rev 5<br>-P1-P01T-00002, Rev 7<br>-M6-HFP-00001001, Rev 0<br>-M6-HFP-00001002, Rev 0<br>-M6-HFP-00001003, Rev 0<br>-M6-HFP-00001004, Rev 0<br>-M6-HFP-00007001, Rev 0<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-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-00001 = 8,311 |
| **Melter Feed Process System cont.** | HFP | **24590-HLW**<br>-3YD-HFP-00001[a] | Section 4.1.4.1; Tables 4-4 and 4-6; Figures C1-1 and C1-4 of | 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) |
|---|---|---|---|---|
| HFP-VSL-00002 (Melter 1 Feed Vessel) | | -M5-V17T-00001, Rev 5<br>-P1-P01T-00002, Rev 7<br>-M6-HFP-00002001, Rev 0<br>-M6-HFP-00002002, Rev 0<br>-M6-HFP-00002003, Rev 0<br>-M6-HFP-00008001, Rev 0<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | Operating Unit Group 10, Addendum C of this Permit. | |
| **Melter Feed Process System cont.**<br><br>HFP-VSL-00005 (Melter 2 Feed Preparation Vessel) | HFP | **24590-HLW**<br>-3YD-HFP-00001[a]<br>-M5-V17T-00001, Rev 5<br>-P1-P01T-00002, Rev 7<br>-M6-HFP-20001001, Rev 0<br>-M6-HFP-20001002, Rev 0<br>-M6-HFP-20001003, Rev 0<br>-M6-HFP-20001004, Rev 0<br>-M6-HFP-20007001, Rev 0 | 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 |

**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) |
|---|---|---|---|---|
| | | **24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **Melter Feed Process System cont.**<br><br>HFP-VSL-00006 (Melter 2 Feed Vessel) | HFP | **24590-HLW**<br>-3YD-HFP-00001[a]<br>-M5-V17T-00001, Rev 5<br>-P1-P01T-00002, Rev 7<br>-M6-HFP-20002001, Rev 3<br>-M6-HFP-20002002, Rev 3<br>-M6-HFP-20002003, Rev 3<br>-M6-HFP-20008001, Rev 0<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-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-00006 = 8,311 |
| **Melter Off-gas Treatment Process System** | HOP | **24590-HLW**<br>-3YD-HOP-00001[a]<br>-M5-V17T-P0003, Rev 1 | 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. | HOP-VSL-00903 = 9891<br><br>HOP-VSL-00904 = 9891 |

**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) |
|---|---|---|---|---|
| HOP-VSL-00903 (Melter 1 SBS Condensate Receiver Vessel)<br><br>HOP-VSL-00904 (Melter 2 SBS Condensate Receiver Vessel) | | -M5-V17T-P20003, Rev 1<br>-M6-HOP-00004, Rev 4<br>-M6-HOP-00006001, Rev 0<br>-M6-HOP-00006002, Rev 0<br>-M6-HOP-20004, Rev 5<br>-M6-HOP-20006001, Rev 0<br>-M6-HOP-20006002, Rev 0<br>-MVD-HOP-P0001, Rev 2<br>-MVD-HOP-P0012, Rev 1<br>-MV-HOP-P0001, Rev 2<br>-MV-HOP-P0003, Rev 2<br>-N1D-HOP-P0009, Rev 2<br>-P1-P01T-00001, Rev 9<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |
| **HLW Canister Decontamination Handling System** | HDH | **24590-HLW**<br>-M5-V17T-00006, Rev 6<br>-M6-HDH-00001001, Rev 1 | 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. | HDH-VSL-00001 = 3314<br><br>HDH-VSL-00002 = 630 |

**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-00001 (Canister Rinse Vessel)<br><br>HDH-VSL-00002 (Canister Decon Vessel 1)<br><br>HDH-VSL-00003 (Waste Neutralization Vessel)<br><br>HDH-VSL-00004 (Canister Decon Vessel 2) | | -M6-HDH-00002001, Rev 1<br>-M6-HDH-00002002, Rev 0<br>-M6-HDH-00002003, Rev 1<br>-M6-HDH-20001001, Rev 1<br>-M6-HDH-20001002, Rev 0<br>-M0-HDH-P0012001, Rev 1<br>-M0-HDH-P0012002, Rev 1<br>-MV-HDH-P0003, Rev 1<br>-MVD-HDH-P0003, Rev 2<br>-MVD-HDH-00006, Rev 5<br>-MVD-HDH-P0009, Rev 0<br>-N1D-HDH-00003, Rev 8<br>-N1D-HDH-P0005, Rev 1<br>-N1D-HDH-P0007, Rev 1<br>-P1-P01T-00001, Rev 9<br>-P1-P01T-00002, Rev 7<br>-3YD-HDH-00002[a]<br>**<u>24590-WTP</u>**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3 | | HDH-VSL-00003 = 5315<br><br>HDH-VSL-00004 = 630 |

**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-MV00-T0003, Rev 3 | | |
| **HLW Melter Cave Support Handling System**<br><br>HSH-TK-00001 (Decontamination Tank Melter Cave 1)<br><br>HSH-TK-00002 (Decontamination Tank Melter Cave 2) | HSH | **24590-HLW**<br>-M6-HSH-00004001, Rev 1<br>-M6-HSH-00004001, Rev 1<br>-M6-HSH-20004001, Rev 1<br>-M6-HSH-20004002, Rev 1<br>-M0-HSH-P0072, Rev 1<br>-N1D-HSH-P0001, Rev 1<br>-P1-P01T-00002, Rev 7<br>**24590-WTP**<br>-3PS-HD00-T0001, Rev 4 | 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<br><br>HSH-TK-00002 = 4,000 |
| **HLW Vitrification Plant Radioactive Liquid Waste Disposal System**<br><br>RLD-VSL-00002 (Off-gas Drains Collection Vessel)<br><br>RLD-VSL-00007 (Acidic Waste Vessel)<br><br>RLD-VSL-00008 (Plant Wash & Drain Vessel) | RLD | **24590-HLW**<br>-3YD-RLD-00001[a]<br>-M5-V17T-P0007001, Rev 1<br>-M5-V17T-P0007002, Rev 1<br>-M6-RLD-00001001, Rev 0<br>-M6-RLD-00001002, Rev. 0<br>-M6-RLD-00001003, Rev 0<br>-M6-RLD-00002001, Rev 0<br>-M6-RLD-00002002, Rev 0<br>-M6-RLD-00002003, Rev 0 | 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<br><br>RLD-VSL-00007 = 18,145<br><br>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) |
|---|---|---|---|---|
| | | -M6-RLD-00002004, Rev 0<br>-M6-RLD-00006, Rev 4<br>-M6-RLD-00007, Rev 4<br>-M6-RLD-00014, Rev 5<br>-MV-RLD-00002, Rev 2<br>-MV-RLD-00003, Rev 0<br>-MV-RLD-00025001 Rev 0<br>-MV-RLD-00025002, Rev 0<br>-MV-RLD-00025003, Rev 0<br>-MV-RLD-00025004, Rev 0<br>-MVD-RLD-00005, Rev 9<br>-MVD-RLD-00007, Rev 7<br>-MVD-RLD-00008, Rev 4<br>-N1D-RLD-P0001, Rev 0<br>-N1D-RLD-P0006, Rev 0<br>-N1D-RLD-P0013, Rev 0<br>-P1-P01T-00001, Rev 9<br>-P1-P01T-00002, Rev 7<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5 | | |

**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-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |

**Footnotes:**

[a]System Descriptions are maintained in the Administrative Record, and are listed here for information only.

**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) |
|---|---|---|---|---|
| **Radioactive Liquid Waste Disposal System**<br><br>RLD-VSL-00164 (Laboratory Area Sink Drain Collection Vessel)<br><br>RLD-VSL-00165 (Hot Cell Drain Collection Vessel) | RLD | **24590-LAB**<br>-3YD-RLD-00001[a]<br>-M5-V17T-00029, Rev 3<br>-M6-RLD-00001001, Rev 1<br>-M6-RLD-00001002, Rev 0<br>-M6-RLD-00001003, Rev 0<br>-M6-RLD-00001004, Rev 0<br>-M6-RLD-00002001, Rev 1<br>-M6-RLD-00002003, Rev 0<br>-M6-RLD-00006001, Rev 0<br>-M6-RLD-00006002, Rev 0<br>-M6-RLD-00006003, Rev 0<br>-M6-RLD-00007001, Rev 0<br>-M6-RLD-00007002, Rev 0<br>-M6-RLD-00008001, Rev 0<br>-M6-RLD-00008002, Rev 0<br>-MVD-RLD-P0164, Rev 1<br>-MVD-RLD-P0165, Rev 1<br>-MV-RLD-P0001, Rev 0<br>-N1D-RLD-P0002, Rev 1 | Section 4.1.5.5; Table C-5 and 4-6 of Operating Unit Group 10, Addendum C of this Permit. | RLD-VSl-00164 = 3180<br><br>RLD-VSL-00165 = 9100 |

**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) |
|---|---|---|---|---|
| | | -N1D-RLD-P0003, Rev 1<br>-P1-60-00007, Rev 3<br>-P1-60-00008, Rev 3<br>**24590-WTP**<br>-3PS-G000-T0002, Rev 9<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, Rev 3 | | |

**Footnotes:**

[a]System Descriptions are maintained in the Administrative Record, and are listed here for information only.

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**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 |

**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-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 |
| 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 |

**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-00013[a] | Not Applicable | Radar Leak Detector | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00026[c] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00026[b] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00028[c] | Not Applicable | Radar Leak Detector | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00028[b] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00029[c] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00029[b] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00031[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-00032[c] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00032[b] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00033[c] | Not Applicable | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-SUMP-00033[b] | Not Applicable | RESERVED | 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 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 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-00002 | Not Applicable | Radar Leak Detector | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| 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 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 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 |

**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-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-00012 | Not Applicable | Thermal Dispersion Level Switch | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| PWD-LDB-00013 | 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-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 Level Switch | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| RLD-LDB-00013 | 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 |
|---|---|---|---|---|---|---|---|---|---|
| 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 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |

**Footnotes:**

[a]Locator (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.

[b]Locator (including P&ID designator) is located on Permit Table III.10.E.I – Pretreatment Plant Tank Systems Primary Containment Systems.

[c]Leak detection instruments for secondary containment to a primary containment sump.

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

**Footnotes:**

[a]Locator (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.

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**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 |

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

**Footnotes:**

[a]Locator (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.

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**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 |

**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-00007[a] | Not Applicable | Thermal Dispersion Level Switch | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | Not Applicable | RESERVED |
| 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 |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |

**Footnotes:**

[a]Locator (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.) |
|---|---|---|---|
| PWD-SUMP-00026<br>P-0123 (Hot Cell El. 0) | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00028<br>P-0123 (Hot Cell El. 0) | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00029<br>P-0123 (Hot Cell El. 0) | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00032<br>P-0123A (Maintenance Cave, El. 0) | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00033<br>P-0123A (Maintenance Cave, El. 0) | 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).

**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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-SUMP-00071<br>P-B005 (Pit-19, El. –19') | 60 | Dry Sump | 30"Dia x 18"Deep<br>Epoxy | **24590-PTF**<br>-M6-PWD-00041, 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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| | | | | -P1-P01T-00006, Rev 4 |
| PWD-SUMP-00040<br>P-B002 (Pit-45, El. –45') | 233.7 | Dry Sump | 60"x30"x30"<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00012, Rev 2<br>-P1-P01T-00006, Rev 4 |
| PWD-SUMP-00001<br>P-0108B (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00001A<br>P-0108C (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00010, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00002<br>P-0108A (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00002A<br>P-0108 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00010, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00003<br>P-0106 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00004<br>P-0104 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-SUMP-00005<br>P-0102A (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00006<br>P-0102 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00008, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00007<br>P-0109 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00009, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00008<br>P-0111 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00009, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00009<br>P-0112 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00009, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00010<br>P-0113 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00009, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00011<br>P-0114 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00009, Rev 3<br>-P1-P01T-00001, Rev 7 |
| PWD-SUMP-00012<br>P-0117 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| | | | | -P1-P01T-00001, Rev 7 |
| PWD-SUMP-00013<br>P-0117A (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00014, Rev 3<br>-P1-P01T-00001, Rev 7 |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00031<br>P-0119 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00010, Rev 3<br>-P1-P01T-00001, Rev 7 |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00034<br>P-0121A (Spent Resin Dewatering, El. 0') | 75 | Dry Sump | 30" Dia. x 27" Deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00012, Rev 2 |
| PWD-SUMP-00035<br>P-0122A (Waste Packaging Area, El. 0') | 75 | Dry Sump | 30" Dia. x 27" Deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00012, Rev 2 |
| PWD-SUMP-00036<br>P-0118 (El. 0') | 75 | Dry Sump | 30" Dia. By ~27" deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-P0012, Rev 2<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-SUMP-00037<br>P-0124A | 7.5 | | 30" Dia. x 27" Deep<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00012, Rev 2 |
| RLD-SUMP-00003<br>P-0150 (Radioactive Liquid Waste Disposal Area, El. 0', outdoor) | 583 | Dry Sump | 78" x 48" x 36" Deep<br>Epoxy coating | **24590-PTF**<br>-M6-RLD-00002003, Rev 0 |
| PVP-ZY-00037-S11B-03, P-0105 (PVP-BULGE-00001, El. 0') | | | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-PVP-00017002, Rev 0 |
| PVP-ZY-00036-S11B-03, P-0101A (PVP-BULGE-00002, El. 0') | | | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-PVP-00018002, Rev 0 |
| TCP-ZF-00032-S11B-03 Drain Line, P-0116 (TCP-BULGE-00004, El. 0') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-TCP-00001002, Rev 1 |
| DIW-ZF-01511-S11B-03 Drain Line, P-0320 (DIW-BULGE-00001, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-DIW-00004001 |
| DIW-ZF-01510-S11B-03, P-0320 Drain Line (DIW-BULGE-00002, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-DIW-00004001 |
| PWD-FD-00005<br>PWD-ZF-03000-S11B-06<br>P-0123 (Hot Cell, El.0') | 939 | N/A | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00011, 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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00006<br>PWD-ZF-03001-S11B-06<br>P-0123 (Hot Cell, El.0') | 939 | N/A | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00011, Rev 2 |
| PWD-FD-00435<br>P-0105 | | NA | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00349<br>P-0105 | | NA | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00436<br>P-0105 | | NA | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00438<br>P-0105A | | NA | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00348<br>P-0105A | | NA | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00437<br>P-0105B | | NA | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-347<br>P-0105B | | NA | 6" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-346<br>P-0105C | | NA | 4" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00293<br>P-0426 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00298<br>P-0425 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00309<br>P-0402 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00310<br>P-0402 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00311<br>P-0402 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00312<br>P-0402 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00376<br>P-0415 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00377<br>P-0415 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00378<br>P-0415 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00379<br>P-0415 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00380<br>P-0415A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00381<br>P-0415A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00382<br>P-0415A Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00383<br>P-0415A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00557<br>P-0430 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00559<br>P-0430 Drain, El. 77' | 665 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00561<br>P-0430 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00563<br>P-0411 Drain, El. 77' | 665 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00564<br>P-0411 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00565<br>P-0410 Drain, El. 77' | 665 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00566<br>P-0410 Drain, El. 77' | 665 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00571<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00572<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00573<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00574<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00575<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00576<br>P-0410 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00583<br>P-0422A Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00584<br>P-0422A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00589<br>P-0402 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00590<br>P-0423 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00591<br>P-0423 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00592<br>P-0423 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00593<br>P-0423 Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00594<br>P-0423 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00595<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00596<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00597<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00598<br>P-0431A Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00599<br>P-0431A Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00600<br>P-0431A Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00604<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00605<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00606<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00607<br>P-0431A Drain, El. 77' | 140 | N/A | 6" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00629<br>P-0425 Drain, El. 77' | 655 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-FD-00630<br>P-0425 Drain, El. 77' | 140 | N/A | 8" Dia<br>304L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| CRP-ZF-00002-S11B-03, P-0317 Drain Line (CRP-BULGE-00001 drain, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-CRP-00003001, Rev 0 |
| CXP-ZF-00012-S11B-03 Drain Line, P-0317 (CXP-BULGE-00004, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-CXP-00003003, Rev 0 |
| UFP-ZF-00043-S11B-03 Drain Line, P-0301 (UFP-BULGE-00001, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-UFP-00016001, Rev 0 |
| UFP-ZF-00042-S11B-03 Drain Line, P-0301 (UFP-BULGE-00002, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-UFP-00017001, Rev 0 |
| UFP-ZY-00002-S11B-03 Drain Line, P-0311 (UFP-BULGE-00005, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M56-UFP-00031001, Rev 0 |
| UFP-ZY-00001-S11B-03 Drain Line, P-0311A (UFP-BULGE-00006, El. 56') | N/A | N/A | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-UFP-00032001, Rev 0 |
| PWD-LDB-00001<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-LDB-00002<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00003<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00004<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00005<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00006<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00007<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-LDB-00008<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00009<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00010<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00011<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00050, Rev 2 |
| PWD-LDB-00012<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00013<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| PWD-LDB-00014<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00015<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00016<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length/<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00017<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length/<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00018<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-PTF**<br>-M6-PWD-00051, Rev 2 |
| PWD-LDB-00019<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 24" Length/<br>Stainless Steel | **24590-PTF**<br>-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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| RLD-LDB-00012<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 34" Length/<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00058, Rev 4 |
| RLD-LDB-00013<br>P-B001 (Inter Facility Transfer Line Tunnel, El. -45') | 6 | N/A | 8" Dia. x 34" Length/<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00058, Rev 4 |
| ASX Sampler 00017 Lower Containment Trough/Dam<br>(P-0311B, El. 56') | N/A | N/A | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00007, Rev 3 |
| ASX Sampler 00019 Lower Containment Trough/Dam<br>(P-0302, El. 56') | N/A | N/A | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00007, Rev 3 |
| ASX Sampler 00020 Lower Containment Trough/Dam<br>(P-0301, El. 56') | N/A | N/A | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00007, Rev 3 |
| ASX Sampler 00025 Lower Containment Trough/Dam<br>(P-0307, El. 56') | N/A | N/A | 3" Dia.<br>Stainless Steel | **24590-PTF**<br>-M6-PWD-00007, 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 No.'s, Specifications No.'s, etc.) |
|---|---|---|---|---|
| **Footnotes:**<br>[a]Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).<br>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. | | | | |

**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).

**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<br>L-B001B (C3/C5 Drains/Sump Collection Vessel Cell, El. –21') | 59 | Dry Sump | 24" Dia. By 30" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00002005, Rev 0<br>-P1-P01T-00001, Rev 4 |
| RLD-SUMP-00029<br>L-0123 (Process Cell, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003002, Rev 1<br>-P1-P01T-00002, Rev 7 |
| RLD-SUMP-00030<br>L-0123 (Process Cell, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003002, Rev 1<br>-P1-P01T-00002, Rev 7 |

**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-00031<br>L-0124 Process Cell Sump, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003002, Rev 1<br>-P1-P01T-00002, Rev 7 |
| RLD-SUMP-00032<br>L-0124 (Process Cell, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003002, Rev 1<br>-P1-P01T-00002, Rev 7 |
| RLD-SUMP-00035<br>L-0126 (Effluent Cell, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003003, Rev 1<br>-P1-P01T-00002, Rev 7 |
| RLD-SUMP-00036<br>L-0126 (Effluent Cell, El. +3') | 37 | Dry Sump | 30" Dia. By 12" deep<br>Stainless Steel<br>(6% Mo) | **24590-LAW**<br>-M6-RLD-00003003, Rev 1<br>-P1-P01T-00002, Rev 7 |
| Drain Line ID# = RLD-FD-00001<br>L-B001B (RLD-BULGE-00001 Drain, El. -21') | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-RLD-00002003, Rev 0 |
| Drain Line ID# = RLD-FD-00035<br>L-0126 (RLD-BULGE-0000-4 Drain El. +3') | N/A | N/A | 2" Dia.<br>6% Mo | **24590-LAW**<br>-M6-RLD-00001005, Rev 0 |
| Drain Line ID# = LOP-FD-00001 | N/A | N/A | 2" Dia.<br>6% Mo | **24590-LAW**<br>-M6-LOP-0001003, 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.) |
|---|---|---|---|---|
| L-0123 (LOP-BULGE-00001 drain El. +3) | | | | |
| Drain Line ID# = LCP-FD-00001<br>L-0123 (LCP-BULGE-00001 Drain, El. +3') | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-LCP-00001001, Rev 0 |
| Drain Line ID# = LCP-FD-00002<br>L-0123 (LCP-BULGE-00002 Drain, El. +3') | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-LCP-00001004, Rev 0<br>-M6-LCP-00001005, Rev 0 |
| Drain Line ID# = RLD-WS-20037-S11B-01<br>L-0123 (Melter 1 Encasement Assembly Drain, El. +3') | N/A | N/A | 1" Dia.<br>316L | **24590-LAW**<br>-M6-LMP-00012001, Rev 0 |
| Drain Line ID# = LFP-FD-00001<br>L-0123 (LFP-BULGE-00001 Drain, El. +3) | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-LFP-00001005, Rev 0 |
| Drain Line ID# = LOP-FD-00002<br>L-0124 (LOP-BULGE-00002 Drain, El. +3) | N/A | N/A | 2" Dia.<br>6% Mo | **24590-LAW**<br>-M6-LOP-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.) |
|---|---|---|---|---|
| Drain Line ID# = LCP-FD-00003<br>L-0124 (LCP-BULGE-00003 Drain, El. +3) | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-LCP-00002001, Rev 0<br>-M6-LCP-00002002, Rev 0 |
| Drain Line ID# = LFP-FD-00002<br>L-0124 (LFP-BULGE-00002 Drain, El. +3) | N/A | N/A | 2" Dia.<br>316L | **24590-LAW**<br>-M6-LFP-00003005, Rev 0 |
| Drain Line ID# =<br>RLD-WS-20033-S11B-01<br>L-0124 (Melter 2 Encasement Assembly Drain, El. +3') | N/A | N/A | 1" Dia.<br>316L | **24590-LAW**<br>-M6-LMP-00042001, Rev 0 |
| LVP-FD-00001<br>L-0218 (Berm floor drain for LVP-TK-00001, El. 28')[b] | N/A | N/A | 4" Dia.<br>316L | **24590-LAW**<br>-M6-LVP-00002003, Rev 0 |
| RLD-FD-00025<br>L-0304F (Curb floor drain for Caustic Scrubber, El. 48')[b] | N/A | N/A | 4" Dia.<br>316L | **24590-LAW**<br>-M6-RLD-00003001, 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 00012 Lower Containment Trough/Dam (L-0301, El. 48') | N/A | N/A | 3" Dia. Stainless Steel (316L) | **24590-LAW** -M6-RLD-00003001, Rev 0 |
| ASX Sampler 00013 Lower Containment Trough/Dam (L-0301, El. 48') | N/A | N/A | 3" Dia. Stainless Steel (316L) | **24590-LAW** -M6-RLD-00003001, Rev 0 |

**Footnotes:**

[a] Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

[b] This sump is routinely accessible for inspections and maintenance.

**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).

**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<br>H-B014 (Wet Process Cell, El. –21') | 75 | Dry Sump | 30" Dia. x 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00015001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| RLD-SUMP-00001<br>H-B014 (Wet Process Cell, El. –21') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00015001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| HOP-SUMP-00003<br>H-B021 (SBS Drain Collection Cell 1, El. –21') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00015001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| HOP-SUMP-00008<br>H-B005 (SBS Drain Collection Cell 2, El. -21') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-20004001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| HDH-SUMP-00001<br>H-B039B (Canister Rinse Tunnel, El. –16.5') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00016001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| HDH-SUMP-00002<br>H-B039A (Canister Rinse Bogie Maintenance Room, El. –16') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00016001, Rev 0<br>-P1-P01T-00001, Rev 9 |
| HDH-SUMP-00003 | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00004002, Rev 0 |

**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-B035 (Canister Decon Cave, El. –16') | | | | -P1-P01T-00001, Rev 9 |
| HFP-SUMP-00002<br>H-0117 (Melter Cave 1, El. 5') | 50 | Dry Sump | 20.5" X 20.5" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00008002, Rev 0<br>-P1-P01T-00002, Rev 7 |
| HFP-SUMP-00005<br>H-0106 (Melter Cave 2 El. 5') | 50 | Dry Sump | 20.5" X 20.5" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD- 20005, Rev 6<br>-P1-P01T-00002, Rev 7 |
| HSH-SUMP-00003<br>H-0117 (Melter Cave 1, El. 3') | 50 | Dry Sump | 20.5" X 20.5" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00008002, Rev 0<br>-P1-P01T-00002, Rev 7 |
| HSH-SUMP-00007<br>H-0106 (Melter Cave 2, El. 3') | 50 | Dry Sump | 20.5" X 20.5" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-20005001, Rev 0<br>-P1-P01T-00002, Rev 7 |
| HSH-SUMP-00008<br>H-310A (Melter 1 Equip. Decon. Pit Area, El. 0') | 50 | Dry Sump | 30" X 24" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00003001, Rev 0<br>-P1-P01T-00002, Rev 7 |
| HSH-SUMP-00009<br>H-0304A (Melter 2 Equip. Decon. Pit Area, El. 0') | 50 | Dry Sump | 30" X 24" X 16"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-20003001, Rev 0<br>-P1-P01T-00002, Rev 7 |
| HPH-SUMP-00001 | 75 | Dry Sump | 30" Dia. X 18" Deep | **24590-HLW**<br>-M6-RLD-00016001, Rev 0 |

**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-0136 (Canister Handling Cave, El. -3') | | | Stainless Steel | |
| HPH-SUMP-00005<br>H-0136 (Canister Handling Cave, El. -3') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00004001, Rev. 0 |
| HPH-SUMP-00003<br>H-B032 (Pour Tunnel 1, El. -21') | 75 | Dry Sump | 30" Dia. X 18" Deep<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00016001, Rev 0 |
| RLD-ZF-03330-S11B-03<br>H-B021 (SBS Drain Collection Cell 1) | N/A | N/A | Line Size Pipe Dia 3" 316L Stainless Steel | **24590-HLW**<br>-M6-RLD-00015001, Rev 0 |
| RLD-ZF-03447-S11B-03<br>H-B005 (SBS Drain Collection Cell 2) | N/A | N/A | Line Size Pipe Dia 3" 316L Stainless Steel | **24590-HLW**<br>-M6-RLD-20004001, Rev 0 |
| RLD-FD-0186<br>H-0308 (Melter 1 - Active Services Cell, El. 37') | N/A | N/A | Line Size Pipe Dia 6"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00015001, Rev 0 |
| RLD-FD-0187<br>H-0302 (Melter 2 - Active Services Cell, El. 37') | N/A | N/A | Line Size Pipe Dia 6"<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-20004001, Rev 0 |
| ASX Sampler 00028 Lower Containment Trough/Dam | N/A | N/A | 3" Dia.<br>Stainless Steel | **24590-HLW**<br>-M6-RLD-00002002, Rev 0 |

**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 | **24590-HLW** -M6-RLD-00002002, Rev 0 |
| ASX Sampler 00042 Lower Containment Trough/Dam (H-0318, El. 37') | N/A | N/A | 3" Dia. Stainless Steel | **24590-HLW** -M6-RLD-00002002, Rev 0 |
| 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.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).

**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<br>A-B003 (C3 Effluent Vessel Cell, El. -18’7’) | 30 | Dry | 30” Dia. X ~13” Deep<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0002, Rev 1<br>-P1-60-00007, Rev 3 |
| RLD-SUMP-00042<br>A-B004 (C5 Effluent Vessel Cell, El. -19’2’) | 30 | Dry | 30” Dia. X ~13” Deep<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0001, Rev 2<br>-P1-60-00007, Rev 3 |
| RLD-SUMP-00045<br>A-B002 (C3 Pump Pit Sump,<br>EL -6’-81/2”LP) | 1.56 | Dry | 2’-0” X 2’-6” X 1/2” | **24590-LAB**<br>-M6-RLD-P0002, Rev 1<br>-P1-60-00007, Rev 3 |

**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-00043A<br>A-B007 (C5 Pump Pit Sump, EL -6'-7"LP) | 1.40 | Dry | 1'-6" X 3'-0" X 1/2"<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0001, Rev 2<br>-P1-60-00007, Rev 3 |
| RLD-SUMP-00043B<br>A-B005 (C5 Pump Pit Sump, EL -6'-7" LP) | 1.40 | Dry | 1'-6" X 3'-0" X 1/2"<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0001, Rev 2<br>-P1-60-00007, Rev 3 |
| RLD-SUMP-00044<br>A-B006 (C5 Piping Pit Sump, EL -6'-7" LP) | 1.56 | Dry | 2'-0" X 2'-6" X 1/2"<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0001, Rev 2<br>-P1-60-00007, Rev 3 |
| RLD-WU-02207-S11E-04<br>A-B003, (C3 Effluent Vessel Cell) | N/A | N/A | 4" Dia<br>316L | **24590-LAB**<br>-M6-RLD-P0002, Rev 1 |
| RLD-ZN-02203-S11E-04<br>A-B004, (C5 Effluent Vessel Cell) | N/A | N/A | 4" Dia<br>316L | **24590-LAB**<br>-M6-RLD-P0001, Rev 2 |
| RLD-ZN-03393-S11E-04<br>A-B004, (C5 Effluent Vessel Cell) | N/A | N/A | 4" Dia<br>316L | **24590-LAB**<br>-M6-RLD-P0001, Rev 2 |
| RLD-ZN-03394-S11E-04<br>A-B004, (C5 Effluent Vessel Cell) | N/A | N/A | 4" Dia<br>316L | **24590-LAB**<br>-M6-RLD-P0001, Rev 2 |
| RLD-LDB-00002<br>A-B004 (C5 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/<br>Stainless Steel | **24590-LAB**<br>-M6-RLD-P0008, 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-00004<br>A-B004 (C5 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0008, Rev 1 |
| RLD-LDB-00005<br>A-B003 (C3 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0007, Rev 1 |
| RLD-LDB-00006<br>A-B003 (C3 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0007, Rev 1 |
| RLD-LDB-00007<br>A-B003 (C3 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0007, Rev 1 |
| RLD-LDB-00008<br>A-B003 (C3 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0007, Rev 1 |
| RLD-LDB-00009<br>A-B004 (C5 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-P0008, Rev 1 |
| RLD-LDB-00011<br>A-B003 (C3 Effluent Vessel Cell, El. -10') | 6 | N/A | 8" Dia. x 24" Length/ Stainless Steel | **24590-LAB**<br>-M6-RLD-00007001, Rev 0 |
| RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |

**Footnotes:**

[a]Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

## III.10.F CONTAINMENT BUILDING UNITS

### III.10.F.1 Containment Building Units and Storage Limits

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

**III.10.F.1.a.i** The Permittees may store and treat, in containment building units listed in Permit Table III.10.F.A., as modified by Permit Condition III.10.F.7.d.iv., all dangerous and mixed waste listed in 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, Operating Unit Group 10, Addendum B, as approved pursuant to Permit Condition III.10.C.3. Total dangerous and mixed waste storage at the containment building units will not exceed the sum of the capacities in column 7 of Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv.

**III.10.F.1.a.ii** The Permittees may place and store dangerous and mixed waste only in the containment building units listed in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., in accordance with Permit Condition III.10.F., and in accordance with Operating Unit Group 10, Chapters 1.0 and 4.0, and Operating Unit Group 10, 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, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit, as approved pursuant to Permit Conditions III.10.F.7.c. and III.10.F.7.d. The Permittees will limit the volume of dangerous and mixed waste to quantities specified for the individual areas listed in column 7 of Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv.

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

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

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

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

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of fine and imprisonment."

### III.10.F.2 Containment Building Unit Design and Construction

**III.10.F.2.a** The Permittees will design and construct the containment building units identified in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., as specified in Operating Unit Group 10, 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, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit, as approved in accordance with Permit Condition III.10.F.7.a. and WAC 173-303-695.

**III.10.F.2.b** The Permittees will design and construct all applicable containment building units' secondary containment systems for each unit listed in Permit Table III.10.F.A., as specified in Operating Unit Group 10, Appendices 8.4 through 8.9, 8.15, 9.4 through 9.9, 9.18, 10.4 through 10.9, and 10.18 of this Permit, as approved in accordance with Permit Condition III.10.F.7.a. and WAC 173-303-695.

**III.10.F.2.c** Modifications to approved design plans and specifications, in Operating Unit Group 10, 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, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this permit, for the containment building units will be allowed only in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g., III.10.C.9.d, and III.10.C.9.e.

### III.10.F.3 Containment Building Unit Management Practices

**III.10.F.3.a** The Permittees will manage all dangerous and mixed waste in containment building units in accordance with procedures described in Operating Unit Group 10, Appendices 8.15, 9.18, 10.18 and Addendum C of this Permit, as approved pursuant to Permit Condition III.10.F.7.d.iv. .

**III.10.F.3.b** The Permittees will follow the description of operating procedures described in Operating Unit Group 10, Appendices 8.15, 9.18, 10.18 and Addendum C, of this permit, as approved pursuant to Permit Condition III.10.F.7.d.iv. and Permit Condition III.10.F.3., and as specified below:

**III.10.F.3.b.i** Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause dangerous and mixed waste to be released from the primary barrier;

**III.10.F.3.b.ii** Maintain the level of stored/treated dangerous and mixed waste within the containment building unit walls so that the height of the wall is not exceeded;

**III.10.F.3.b.iii** Take measures to prevent the tracking of dangerous and mixed waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed;

**III.10.F.3.b.iv** Maintain the containment building unit at all times to prevent the spread of airborne dangerous and/or mixed waste contamination into less contaminated or uncontaminated areas. All air pollution control devices for exhaust from containment building unit must be properly maintained and operational when storing or treating dangerous and mixed waste in the containment building units;

**III.10.F.3.b.v** Collect and remove liquids and waste to minimize hydraulic head on the containment system at the earliest practicable time.

**III.10.F.3.c** The Permittees will inspect the containment building units per requirements in the Operating Unit Group 10, Addendum E1 of this permit, as approved pursuant to Permit

Condition III.10.C.5., 40 CFR 264.1101(c)(4),in accordance with WAC 173-303-695 and WAC 173-303-320 and record in the Facility's operating record, at least once every seven (7) days, data gathered from monitoring equipment and leak detection equipment as well as the containment building unit and area immediately surrounding the containment building unit to detect signs of releases of dangerous and mixed waste.

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

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

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

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

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

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

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

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

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

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

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

**III.10.F.5 Recordkeeping (WAC 173-303-380)**

For the containment building units, the Permittees will record and maintain in the WTP Unit operating record, all monitoring, calibration, recording, 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.

### III.10.F.6 Closure

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

### III.10.F.7 Compliance Schedule

**III.10.F.7.a** All information identified for submittal to Ecology in Permit Conditions III.10.F.7.b. through e. of this compliance schedule must be signed in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.F.1.d. [WAC 173-303-806(4)].

**III.10.F.7.b** Prior to initial receipt of dangerous and/or mixed waste, the Permittees will submit to Ecology a certification by a qualified, registered, professional engineer that the containment building units design meets the requirements of Permit Conditions III.10.F.1.and III.10.F.2. in accordance with Permit Condition III.10.F.7.a. The certification will also be stored in the WTP Unit operating record. For containment buildings units in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., identified as allowed to manage free liquids, the certification will include an additional demonstration that the containment building meets the requirements specified in 40 CFR 264.1101(b), in accordance with WAC 173-303-695.

**III.10.F.7.c** The Permittees submit to Ecology pursuant to Permit Condition III.10.C.9.f., prior to construction of the containment building unit containment system, and as appropriate, leak detection system for each containment building unit (per level, per WTP Unit building) as identified in Permit Condition III.10.F.1., Permit Tables III.10.F.A., engineering information as specified below, for incorporation, as appropriate, into Operating Unit Group 10, Appendices 8.1, 8.2, 8.3, 8.4 through 8.10, 8.13, 8.15, 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 this Permit. At a minimum, engineering information specified below will show the following as required in accordance with WAC 173-303-695 (the information specified below will include dimensioned engineering drawings showing floors, walls, and ceilings/roof of the containment building units and other information on floor drains and sumps):

**III.10.F.7.c.i** Design drawings (General Arrangement Drawings in plan ) and specifications for the foundation, containment, including liner/coating installation details and leak detection methodology, as appropriate [40 CFR 264.1101(a)(1) and (b), in accordance with WAC 173-303-695].

**III.10.F.7.c.ii** The Permittees provide the design criteria (references to codes and standards, load definitions and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the containment system. This information demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [40 CFR 264.1101(a)(2) in accordance with WAC 173-303-695, in accordance with WAC 173-303-695].

**III.10.F.7.c.iii** The Permittees provide documentation addressing how coatings will withstand the movement of personnel, waste, and equipment during the operating life of the containment building per 40 CFR 264.1101(a)(2), (a)(4), and (b) in accordance with WAC 173-303-695.

**III.10.F.7.c.iv** Containment/foundation and, as appropriate, for leak detection systems, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials as applicable [e.g. physical and chemical tolerances]) [40 CFR 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].

**III.10.F.7.c.v** A detailed description of how the containment/foundation and, as appropriate, leak detection systems, will be installed.

**III.10.F.7.c.vi** Submit Permit Tables III.10.F.B and III.10.F.C, completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with the information to be provided in i. through viii.

**III.10.F.7.c.vii** A detailed description of how fugitive emissions will be controlled such that any openings (e.g., doors, windows, vents, cracks, etc.) exhibit no visible emissions [40 CFR 264.1101(c)(1)(iv) in accordance with WAC 173-303-695].

**III.10.F.7.c.viii** Prior to installation, the Permittees will submit coating vendor information specific to containment buildings for incorporation into the Administrative Record [40 CFR 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].

**III.10.F.7.c.ix** Prior to installation, leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under i. above, will be submitted for incorporation into the Administrative Record;

**III.10.F.7.c.x** Prior to installation, the Permittees will submit leak detection system instrumentation control logic narrative description (e.g., descriptions of fail-safe conditions, etc.);

**III.10.F.7.c.xi** Prior to installation, system descriptions related to leak detection systems will be submitted for incorporation into the Administrative Record;

**III.10.F.7.c.xii** For leak detection system instrumentation for containment buildings as identified in Permit Tables III.10.F.D., a detailed description of how the leak detection system instrumentation will be installed and tested [40 CFR 264.1101(b)(3) in accordance with WAC 173-303-695] will be submitted prior to installation.

Information pertaining to leak detection systems in Permit Conditions III.10.F.7.c.ix. through xii. Will be submitted pursuant to Permit Conditions III.10.E.9.d.vii., viii., x., and xiii.

**III.10.F.7.d** Prior to initial receipt of dangerous and mixed waste, in the WTP Unit, the Permittees will submit the following, as specified below, for incorporation into Operating Unit Group 10. The information specified below into Operating Unit Group 10, and incorporated pursuant to Permit Condition III.10.C.2.g. will be followed:

**III.10.F.7.d.i** Registered Professional Engineer certification documentation consistent with the information provided in III.10.F.7.b. and III.10.F.7.c. for incorporation in the Administrative Record. The certification must be maintained in the WTP Unit Operating Record [40 CFR 264.1101(c)(2)];

**III.10.F.7.d.ii** Updated Addendum C, Section 4.2.1., and the figures for containment building units identified in Permit Table III.10.F.A. (as modified pursuant to Permit Condition III.10.F.7.d.iv., consistent with Operating Unit Group 10, 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, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18, as approved pursuant Permit Conditions III.10.F.7.a. through d.);

**III.10.F.7.d.iii** Description of operating procedures demonstrating compliance with 40 CFR 264.1101(c) and (d) in accordance with WAC 173-303-695;

**III.10.F.7.d.iv** III. Permit Table III.10.F.A., amended as follows:

A. Under column 1, update and complete list of dangerous and mixed waste containment building units including room location and number.

B. Under column 2, update unit dimensions.

C. Under column 3, replace the 'Reserved' with the Operating Unit Group 10, Appendices 8.0, 9.0, and 10.0, subsections specific to containment building units as listed in column 1.

D. Under column 4, update and complete list of narrative description, tables, and figures.

E. Under column 5, replace the 'Reserved' to indicate if container storage is used in each containment building units (Yes or No) consistent with Permit Table III.10.D.A. updated pursuant to Permit Condition III.10.D.10.d.

F. Under column 6, replace the 'Reserved' to indicate if tank storage is used in each containment building units (Yes or No) consistent with Permit Tables III. 10.E.A-D., updated pursuant to Permit Condition III.10.E.9.e.vi.

G. Under column 7, replace the 'Reserved' with the maximum operating volume for each containment building unit, to include the container storage capacity specified in Permit Table III.10.D.A., tank capacity specified in Permit Tables III. 10.E.A-D. and update the total capacity for the containment building units.

H. Under column 8, update the status of each containment building unit.

**III.10.F.7.d.v** Permit Table III.10.F.D. will be completed for Containment Building leak detection system instrumentation and parameters to provide the information as specified in each column heading. Leak detection system monitors and instruments for critical systems as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b. will be addressed.

**III.10.F.7.e** All information provided under Permit Condition III.10.F.7.d. must be consistent with information provided pursuant to Permit Conditions III.10.F.7.a. through d., 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 | No |
| **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 | No |
| 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 | No |
| 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 | No |
| 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 | No |
| P-0124 C3 Workshop | (24 × 24 × 16) + (34 x 24 x 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 | 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 |
|---|---|---|---|---|---|---|---|
| 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 | No |
| 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 | No |
| 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 | No |
| 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 | No |
| 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 | No |
| 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 | 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-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 | 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-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 | 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. | | | | |
| 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 Area | 19×18×14 | 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-0115E Container/Monitoring/Export Area | 19×18×14 | 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 |

**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 |
|---|---|---|---|---|---|---|---|
| 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 | 16.5×20x23 | 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-B013C Melter 1 Pour Cave | 16.5×20x23 | 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 | 16.5×20x23 | 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 | 16.5×20x23 | 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 | 16.5×20x23 | 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 10, Addendum C of this Permit. | | | | |
| L-B009B Future Melter 3 Pour Cave | 16.5×20x23 | 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 |
| AW Buffer Container 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-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:<br>H-0117 Melter Cave 1<br>H-0116B Melter Cave 1<br>C3/C5 Airlock | <br><br>75 x 32 x 54<br>24 x 25 x 54<br><br>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 |

**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-0310A Melter Cave 1 Equipment Decon Pit | | | | | | | |
| HLW Melter Cave 2 Containment Building:<br>H-0106 Melter Cave 2<br>H-0105B Melter Cave 2 C3/C5 Airlock<br>H-0304A Melter Cave 2 Equipment Decon Pit | 75 x 32 x 54<br>24 x 25 x 54<br>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, Addendum C of this Permit. | RESERVED | RESERVED | RESERVED | No |
| 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:<br>H-0311A C3 Workshop<br>H-0311B MSM Maintenance Workshop | 19 x 30 x 22<br>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 |

**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-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:<br>H-0410B E&I Room<br>H-0411 Waste Handling Room | 17 x 20 x 10<br>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:<br>H-0126A Crane Maintenance Room<br>H-0126B Swabbing and Monitoring Room<br>H-028 Cask Import/Export Room | 15 x 20 x 31<br>30 x 18 x 31<br>15 x 45 x 43 | 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 |

**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[b] (feet) & Materials of Construction | Maximum Allowable Liquid Height (inches) | Secondary Containment Volume (gallons) | Unit Description Drawings |
|---|---|---|---|---|---|
| PWD-SUMP-00026 P-0123 (El. 0') | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00028 P-0123 (El. 0') | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00029 P-0123 (El. 0') | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00032 P-0123A | RESERVED | RESERVED | RESERVED | RESERVED | RESERVED |
| PWD-SUMP-00033 P-0123A (El. 0') | 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).

**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).

**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.

## III.10.G PRETREATMENT PLANT MISCELLANEOUS UNIT SYSTEMS

Unless otherwise noted in Table III.10.G.A, for purposes of Permit Section III.10.G., where reference is made to WAC 173-303-640, the following substitutions apply: substitute the terms "Pretreatment Plant Miscellaneous Unit System(s)" for "tank system(s)," "miscellaneous unit(s)" for "tank(s)," "equipment" for "ancillary equipment," and "miscellaneous unit(s) or equipment of a Pretreatment Plant Miscellaneous Unit System" for "component(s)" in accordance with WAC 173-303-680. Miscellaneous unit systems, exempt from the WAC-173-303-640 requirements in Permit Section III.10.G are noted as exempt in Table III.10.G.A.

### III.10.G.1 Waste and Storage Limits

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

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

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

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

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

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

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

**III.10.G.2 Miscellaneous Unit Systems Design and Construction [WAC 173-303-640, in accordance with WAC 173-303-680(2) and WAC 173-303-340].**

**III.10.G.2.a** The Permittees will construct the Pretreatment Plant Miscellaneous Unit Systems identified in Permit Table III.10.G.A, as specified in Operating Unit Group 10, Appendices 8.1 through 8.14 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b., III.10.G.10.c., and III.10.G.10.d.

**III.10.G.2.b** The Permittees will construct secondary containment systems for the Pretreatment Plant Miscellaneous Unit Systems identified in Permit Tables III.10.G.A and III.10.G.B, as specified in Operating Unit Group 10, Appendices 8.2, 8.4 through 8.14 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b., III.10.G.10.c., and III.10.G.10.d.

**III.10.G.2.c** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of this Permit for the Pretreatment Plant Miscellaneous Unit Systems 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.

**III.10.G.3 Miscellaneous Unit System Installation and Certification [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-340].**

**III.10.G.3.a** The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to Pretreatment Plant Miscellaneous Unit Systems during installation. Prior to covering, enclosing, or placing a new Pretreatment Plant Miscellaneous Unit System(s) or component(s) in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of similar systems or components, must inspect the system for the presence of any of the following items:

**III.10.G.3.a.i** Weld breaks;

**III.10.G.3.a.ii** Punctures;

**III.10.G.3.a.iii** Scrapes of protective coatings;

**III.10.G.3.a.iv** Cracks;

**III.10.G.3.a.v** Corrosion;

**III.10.G.3.a.vi** Other structural damage or inadequate construction/installation;

**III.10.G.3.a.vii** All discrepancies must be remedied before the Pretreatment Plant Miscellaneous Unit Systems are covered, enclosed, or placed in use [WAC 173-303-640(3)(c) in accordance with WAC 173-303-680(2) and (3)].

**III.10.G.3.b** For Pretreatment Plant Miscellaneous Unit Systems or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the miscellaneous unit and compacted to ensure that the miscellaneous unit and piping are fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

**III.10.G.3.c** The Permittees must test for tightness all new Pretreatment Plant miscellaneous units and equipment, prior to being covered, enclosed, or placed into use. If the Pretreatment Plant Miscellaneous Unit Systems are found not to be tight, all repairs necessary to remedy the

leak(s) in the system must be performed prior to the Pretreatment Plant Miscellaneous Units Systems being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-680(2) and (3)].

**III.10.G.3.d** The Permittees must ensure Pretreatment Plant Miscellaneous Unit Systems equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

**III.10.G.3.e** The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit Group 10, Appendices 8.9 and 8.11 as approved pursuant to Permit Conditions III.10.G.10.b.i., III.10.G.10.b.iv., III.10.G.10.b.v., III.10.G.10.c.i., III.10.G.10.c.iv., III.10.G.10.c.v., and 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 other corrosion protection is necessary to ensure the integrity of the Pretreatment Plant Miscellaneous Unit Systems during use of the Pretreatment Plant Miscellaneous Unit Systems. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

**III.10.G.3.f** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain, and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the Pretreatment Plant Miscellaneous Unit Systems and supervise the installation of the Pretreatment Plant Miscellaneous Unit Systems, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that each Pretreatment Plant Miscellaneous Unit System and corresponding containment system listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e), were performed [WAC 173-303-640(3)(a), WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

**III.10.G.3.g** The independent Pretreatment Plant Miscellaneous Unit System installation inspection and subsequent written statements will be certified in accordance with WAC 173-303-810(13)(a) as modified pursuant to Permit Condition III.10.G.1.d., comply with all requirements of WAC 173-303-640(3)(h), in accordance with WAC 173-303-680, and will consider, but not be limited to, the following miscellaneous unit system installation documentation:

**III.10.G.3.g.i** Field installation report with date of installation;

**III.10.G.3.g.ii** Approved welding procedures;

**III.10.G.3.g.iii** Welder qualifications and certification;

**III.10.G.3.g.iv** Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute (API) Standard 620, or Standard 650 as applicable;

**III.10.G.3.g.v** Tester credentials;

**III.10.G.3.g.vi** Field inspector credentials;

**III.10.G.3.g.vii** Field inspector reports;

**III.10.G.3.g.viii** Field waiver reports; and

**III.10.G.3.g.ix** Non-compliance reports and corrective action (including field waiver reports) and repair reports.

**III.10.G.4 Integrity Assessments [WAC 173-303-340 and WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3)].**

**III.10.G.4.a** The Permittees will ensure periodic integrity assessments are conducted on the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as approved/modified pursuant to Permit Condition III.10.G.10., over the term of this Permit in accordance with WAC173-303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit Group 10, Addendum E of this Permit, as approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c. Results of the integrity assessments will be included in the WTP Unit operating record until ten (10) years after post-closure, or corrective action is complete and certified, whichever is later.

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

**III.10.G.4.c** The Permittees must immediately and safely remove from service any Pretreatment Plant Miscellaneous Unit 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.G.5.j.i. through iv., and vi. The affected Pretreatment Plant Miscellaneous Unit or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.G.5.j.v. [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

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

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

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

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

**III.10.G.5.d** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems to prevent spills and overflows using the description of controls and practices, as required under WAC 173-303-640(5)(b), described in Permit Condition III.10.C.5, and Operating Unit Group 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition

III.10.G.10.e.iv. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(c)(ix)].

**III.10.G.5.e** For routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.G.10.e.vi., the Permittees will mark all routinely non-accessible Pretreatment Plant Miscellaneous Unit System access points with labels or signs to identify the waste contained in the units. 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 miscellaneous unit system(s). 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.G.5.f** For all Pretreatment Plant Miscellaneous Unit Systems not addressed in Permit Condition III.10.G.5.e, the Permittees will mark all these miscellaneous unit systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the unit. The labels, 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 miscellaneous unit system(s) [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

**III.10.G.5.g.** The Permittees will ensure that the secondary containment systems for Pretreatment Plant Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10, 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, ground water, or surface water at any time waste is in the Pretreatment Plant Miscellaneous Units System. 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 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.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.G.5.i.** An impermeable coating, as specified in Operating Unit Group 10, Appendices 8.4, 8.5,8.7, 8.9, 8.11, and 8.12 of this Permit, as approved pursuant to Permit Condition III.10.G.10.b.v. of this Permit, will be maintained for all concrete containment systems and concrete portions of containment systems for each Pretreatment Plant Miscellaneous Unit System listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10 [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 mixed waste into the concrete. All coatings will meet the following performance standards:

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

**III.10.G.5.i.ii.** The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical

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

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

**III.10.G.5.j.** The Permittees will inspect all secondary containment systems for the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B., as approved/modified pursuant to Permit Condition III.10.G.10., in accordance with the Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant 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 of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(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)]:

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

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

**III.10.G.5.j.iii.** Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of miscellaneous unit systems will be, as a minimum, managed as dangerous and/or mixed waste;

**III.10.G.5.j.iv.** If the cause of the release was a spill that has not damaged the integrity of the miscellaneous unit system, the Permittees may return the miscellaneous unit system to service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(e)(ii). In such a case, the Permittees will take action to ensure the incident that caused liquid to enter the containment system will not reoccur [WAC 173-303-320(3)];

**III.10.G.5.j.v.** If the source of the dangerous and/or mixed waste is determined to be a leak from the primary Pretreatment Plant Miscellaneous Unit System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees must comply with the requirements of WAC 173-303-640(7), and take the following actions:

A Close the miscellaneous unit following procedures in WAC 173-303-640(7)(e)(i) and in accordance with WAC 173-303-680, and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8; or

B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.G.1.d.) the Pretreatment Plant Miscellaneous Unit System in accordance with Operating Unit Group 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e.v. before the Pretreatment Plant Miscellaneous Unit System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

**III.10.G.5.j.vi.** The Permittees will document, in the operating record, actions/procedures taken to comply with i. through v. above, as specified in WAC 173-303-640(6)(d) and in accordance with WAC 173-303-680(2) and (3).

**III.10.G.5.j.vii.** In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and report releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).

**III.10.G.5.k.** 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)]:

A. Reasons for delayed removal.

B. Measures implemented to ensure continued protection of human health and the environment.

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

**III.10.G.5.l.** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in accordance with Operating Unit Group 10, Addendum C as updated pursuant to Permit Condition III.10.G.10.e.vi. and Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e., and the following:

**III.10.G.5.l.i.** The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in order to maintain the systems and process parameters listed in Permit Table III.10.G.C. as approved/modified pursuant to Permit Condition III. 10.G.10., within the operating trips and operating ranges specified in Permit Table III.10.G.C., and consistent with assumptions and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1, as approved pursuant to Permit Condition III.10.C.11.b. [WAC 173-303-815(2)(b)(ii) and WAC 173-303-680(2) and (3)]. For the purposes of this Permit Condition, Operating Unit Group 10, Appendix 6.3.1. will be superseded by Appendix 6.4.1. upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d.

**III.10.G.5.l.ii.** The Permittees will calibrate/function test the instruments listed in Permit Table III.10.G.C., in accordance with Operating Unit Group 10, Appendix 8.15, as approved pursuant to Permit Condition III.10.G.10.e.xii.

**III.10.G.5.m.** For any portion of the Pretreatment Plant Miscellaneous Unit Systems which have the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.G.5.n.** For each miscellaneous unit holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

### III.10.G.6 Air Emissions

**III.10.G.6.a** Treatment effectiveness, feed-rates, and operating rates for dangerous and mixed waste systems and sub-systems contained in the Pretreatment Plant (as specified in Permit Tables III.10.E.A, III.10.F.A, and III.10.G.A, as approved/modified pursuant to Permit Conditions III.10.E.9., III.10.F.5., III.10.G.10., respectively) will be as specified in Permit Sections III.10.E, III.10.F, and III.10.G, and consistent with the assumptions and basis reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved

pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1, upon its approval, pursuant to either Permit Condition III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

**III.10.G.6.b** Compliance with Permit Condition III.10.G.6.a. of this Permit will be regarded as operating within the emission limits specified in Permit Table III.10.G.D., as approved pursuant to Permit Conditions III.10.C.11.b., III.10.C.11.c., or III.10.C.11.d. of this Permit.

**III.10.G.6.c** All air pollution control devices and capture systems in the Pretreatment Plant Miscellaneous Unit Systems 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 above equipment is properly operated and maintained so as to minimize the emission of air contaminants and process upsets will be established.

**III.10.G.6.d** The Permittees will ensure that for all dangerous and/or mixed waste areas, systems, and units contained in the Pretreatment Plant (as specified in Permit Tables III.10.E.A, III.10.F.A, and III.10.G.A, as approved pursuant to Permit Conditions III.10.E.9.e.xii., III.10.F.7.d.iv., and III.10.G.10.e.ix., respectively), the Pretreatment Vessel Vent Process System specified in Permit Table III.10.G.A.i will be in operation prior to waste being introduced into these dangerous and/or mixed waste areas, systems, and units contained in the Pretreatment Building. At any time the Pretreatment Vessel Vent Process System ceases to operate or produces insufficient vacuum to recover emissions from the areas, systems, or units, the Permittees will not commence new treatment activities within the dangerous and mixed waste areas, systems, or units contained in the Pretreatment Building, and take measures to minimize evolution of emissions from on-going treatment, and will not receive new dangerous and/or mixed waste shipments into the Pretreatment Building. The Permittees will not re-commence new treatment activities until the Pretreatment Vessel Vent Process System is operational and producing sufficient vacuum to recover emissions.

### III.10.G.7 Inspections [WAC 173-303-680(3)]

**III.10.G.7.a** The Permittees will inspect the Pretreatment Plant Miscellaneous Unit Systems in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

**III.10.G.7.b** The inspection data for Pretreatment Plant Miscellaneous Unit Systems will be recorded, and the records will be placed in the WTP Unit operating record for the Pretreatment Plant Miscellaneous Unit Systems, in accordance with Permit Condition III.10.C.4.

### III.10.G.8 Recordkeeping

The Permittees will record and maintain in the WTP Unit operating record for the Pretreatment Plant Miscellaneous Unit Systems, 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.

### III.10.G.9 Closure

The Permittees will close the Pretreatment Plant Miscellaneous Unit Systems in accordance with Operating Unit Group 10, Addendum H, as approved pursuant to Permit Condition III.10.C.8.

**III.10.G.10 Compliance Schedule**

**III.10.G.10.a** All information identified for submittal to Ecology in a. through e. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.G.1.d. [WAC 173-303-806(4)].

**III.10.G.10.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to construction of each secondary containment and leak detection system for the Pretreatment Plant Miscellaneous Unit Systems (per level) as identified in Permit Tables III.10.G.A and III.10.G.B, engineering information as specified below, for incorporation into Operating Unit Group 10, 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 information specified below will show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

**III.10.G.10.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. IQRPE Reports will be consistent with the information separately provided in ii. through ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i )];

**III.10.G.10.b.ii** Design drawings (General Arrangement Drawings, in plan) and specifications for the foundation, secondary containment, including, liner installation details, and leak detection methodology [Note: leak detection systems for areas where daily, direct, or remote visual inspection is not feasible, will be continuous in accordance with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

**III.10.G.10.b.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.b.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the

potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.b.v** Secondary containment/foundation and leak detection systems materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials), as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.b.vi** Detailed description of how the secondary containment for each miscellaneous unit system will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B);

**III.10.G.10.b.vii** Submit Permit Table III.10.G.B. completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in i. through vi. above;

**III.10.G.10.b.viii** Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.b.ix** A detailed description of how miscellaneous unit design provides access for conducting future miscellaneous unit integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-806(4)(i)(i)(B)].

**III.10.G.10.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of each Pretreatment Plant Miscellaneous Unit System as identified in Permit Tables III.10.G.A and III.10.G.B, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendix 8.1 through 8.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 and in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.G.10.c.i** IQRPE Reports (specific to miscellaneous unit) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will be consistent with the information separately provided in ii. through xi. below and the IQRPE Report specified in Permit Condition III.10.G.10.b.i. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.G.10.c.ii** Design drawings (General Arrangement Drawings in plan , Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], and Mechanical Drawings) and specifications, and other information specific to miscellaneous units (to show location and physical attributes of each miscellaneous unit), [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.G.10.c.iii** Miscellaneous unit design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the miscellaneous unit(s). Structural support calculations specific to off-specification, non-standard, and field fabricated miscellaneous units will be submitted for incorporation into the Administrative

Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.c.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.c.v** Miscellaneous unit materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.G.10.c.vi** Miscellaneous unit vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, will be submitted for incorporation into the Administrative Record [ WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.c.vii** System Description related to miscellaneous units will be submitted for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)].

**III.10.G.10.c.viii** Mass and energy balance for normal projected operating conditions used in developing the Piping and Instrumentation Diagrams and the Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.c.ix** A detailed description of how the miscellaneous unit will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

**III.10.G.10.c.x** Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.c.xi** Documentation that miscellaneous units are designed to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of equipment as identified in Permit Tables III.10.G.A and III.10.G.B, not addressed in Permit Condition III.10.G.10.c., engineering information as specified below for incorporation into Operating Unit Group 10, Appendices 8.1through 8.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.G.10.d.i** IQRPE Reports (specific to equipment) will include a review of design drawings, calculations, and other information as applicable, on which the certification report is based. The reports will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will

be consistent with the information provided separately in ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.G.10.b. and III.10.G.10.c. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.d.ii** Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems]) specifications and other information specific to equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.d.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.d.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.G.10.d.v** Materials selection documentation for equipment (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.G.10.d.vi** Vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, for equipment will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];

**III.10.G.10.d.vii** Miscellaneous unit, equipment, and leak detection system instrument control logic narrative description (e.g., descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

**III.10.G.10.d.viii** System Descriptions related to equipment and system descriptions related to leak detection systems, for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.d.ix** A detailed description of how the equipment will be installed and tested [WAC 173-303-640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.d.x** For process monitoring, control, and leak detection system instrumentation for the WTP Unit Miscellaneous Unit Systems as identified in Permit Table III.10.G.C, a detailed description of how the process monitoring, control, and leak detection system instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.d.xi** Mass and energy balance for projected normal operating conditions, used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.d.xii** Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].

**III.10.G.10.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.G.10.c.ii. and Permit Conditions III.10.G.10.d.ii., vii., viii., and x. above, will be submitted for incorporation into the Administrative Record.

**III.10.G.10.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit Group 10, Appendix 8.15, except Permit Condition III.10.G.10.e.i., which will be incorporated into Operating Unit Group 10, Addendum E, of this Permit. All information provided under this permit condition must be consistent with information 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 approved by Ecology.

**III.10.G.10.e.i** Integrity assessment program and schedule for the Pretreatment Plant Miscellaneous Unit Systems will address the conducting of periodic integrity assessments on the Pretreatment Plant Miscellaneous Unit Systems over the life of the systems, as specified in Permit Condition III.10.G.10.b.ix. and WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

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

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

**III.10.G.10.e.iv** Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from the Pretreatment Plant Miscellaneous Unit Systems, or containment systems, in compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680 [WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.e.v** Description of procedures for investigation and repair of the Pretreatment Plant Miscellaneous Unit Systems [WAC 173-303–640(6) and WAC 173-303-640(7)(e) and

(f), in accordance with WAC 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(i)(i)(B)];

**III.10.G.10.e.vi** Updated Addendum C, Narrative Descriptions, Tables and Figures as identified in Permit Tables III.10.G.A and III.10.G.B., as modified pursuant to Permit Condition III.10.G.10.e.ix., and updated to identify routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.G.10.e.vii** Descriptions of procedures for management of ignitable and reactive, and incompatible dangerous and/or mixed waste, in accordance with WAC 173-303-640(9) and (10), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).

**III.10.G.10.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated throughout the Pretreatment Plant Miscellaneous Unit Systems, pursuant to WAC 173-303-380.

**III.10.G.10.e.ix** Permit Table III.10.G.A, amended as follows [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)]:

A. Under column 1, update and complete list of dangerous and mixed waste Pretreatment Plant Miscellaneous Unit Systems, including plant items which comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the 'Reserved' with the Operating Unit Group 10, Appendix 8.0 subsections specific to miscellaneous unit systems as listed in column 1.

D. Under column 4, update and complete list of narrative description tables and figures.

E. Under column 5, update and complete maximum operating volume for each miscellaneous unit, as applicable.

F. Permit Table III.10.G.A.i., amended as follows:

1. Under column 1, update and complete list of plant items that comprise the Pretreatment Plant Vessel Vent System (listed by item number).

2. Under column 2, update and complete designations.

3. Under column 3, replace the 'Reserved' with the Operating Unit Group 10, Appendix 8.0, subsections (e.g., 9.1, 9.2, etc.) specific to systems as listed in column 1.

4. Under column 4, update and complete list of narrative description tables and figures.

**III.10.G.10.e.x** Permit Table III.10.G.C. will be completed for Pretreatment Plant Miscellaneous Unit System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b.and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit

condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.G.10.e.xi** Supporting documentation for operating trips and expected operating range as specified in Permit Table III.10.G.C., as approved pursuant to Permit Condition III.10.G.10.e.x. [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(B), WAC 173-303-806(4)(i)(iv), and WAC 173-303-806(4)(i)(v)];

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

A. Procurement Specifications.

B. Location used.

C. Range, precision, and accuracy.

D. Detailed descriptions of calibration/functionality test procedures (e.g., method number [ASTM]) or provide a copy of manufacturer's recommended calibration procedures.

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.).

F. Equipment instrument control logic narrative description (e.g., descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(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) |
|---|---|---|---|---|
| **Waste Feed Evaporation Process System**<br><br>FEP-SEP-00001A (Waste Feed Evaporator Separator Vessel)<br><br>FEP-SEP-00001B (Waste Feed Evaporator Separator Vessel) | FEP | **24590-PTF**<br>-3PS-MEVV-T0001, Rev 2<br>-M5-V17T-00004001, Rev 3<br>-M5-V17T-00004002, Rev 3<br>-M6-FEP-00001001, Rev 1<br>-M6-FEP-00001002, Rev 0<br>-M6-FEP-00001003, Rev 0<br>-M6-FEP-00002001, Rev 0<br>-M6-FEP-00002002, Rev 1<br>-M6-FEP-00002003, Rev 0<br>-M6-FEP-00003001, Rev 0<br>-M6-FEP-00003002, Rev 0<br>-M6-FEP-00004001, Rev 0<br>-M6-FEP-00004002, Rev 1<br>-M6-FEP-00004003, Rev 0<br>-M6-FEP-00005001, Rev 0<br>-MVD-FEP-P0001, Rev 2<br>-MVD-FEP-P0002, Rev 2<br>-MVD-FEP-P0003, Rev 1<br>-MVD-FEP-00006, Rev 5<br>-MVD-FEP-00007, Rev 5<br>-MV-FEP-P0001, Rev 0<br>-MV-FEP-P0002, Rev 0<br>-N1D-FEP-00002, Rev 6 | 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. | FEP-SEP-00001A = 14,512<br><br>FEP-SEP-00001B = 14, 512 |

**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) |
|---|---|---|---|---|
| | | -N1D-FEP-P0003, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7 | | |
| **Waste Feed Evaporation Process System (Cont.)**<br><br>FEP-COND-00001A (Waste Evaporator Primary Condenser)<br><br>FEP-COND-00001B (Waste Evaporator Primary Condenser)<br><br>FEP-COND-00002A (Waste Evaporator Intercondenser)<br><br>FEP-COND-00002B (Waste Evaporator Intercondenser)<br><br>FEP-COND-00003A (Waste Evaporator Aftercondenser)<br><br>FEP-COND-00003B (Waste Evaporator Aftercondenser) | FEP | **24590-PTF**<br>-3PS-MEVV- T0001, Rev 2<br>-M5-V17T-00004001, Rev 3<br>-M5-V17T-00004002, Rev 3<br>-M6-FEP-00003002, Rev 0<br>-M6-FEP-00005001, Rev 0<br>-MED-FEP-P0003, Rev 0<br>-MED-FEP-P0004, Rev 0<br>-MED-FEP-P0005, Rev 0<br>-MED-FEP-P0006, Rev 0<br>-MED-FEP-P0007, Rev 0<br>-MED-FEP-P0008, Rev 0<br>-N1D-FEP-P0008, Rev 0<br>-N1D-FEP-00009, Rev 3<br>-N1D-FEP-00010, Rev 3<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7 | 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 |
| **Waste Feed Evaporation Process System (Cont.)**<br><br>FEP-RBLR-00001A (Waste Feed Evaporator Reboiler) | FEP | **24590-PTF**<br>-3PS-MEVV-T0001, Rev 2<br>-M5-V17T-00004001, Rev 3<br>-M5-V17T-00004002, Rev 3 | Section 4.1.2.2.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit | 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) |
|---|---|---|---|---|
| FEP-RBLR-00001B (Waste Feed Evaporator Reboiler) | | -MED-FEP-P0010, Rev 0<br>-N1D-FEP-P0008, Rev 0<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7 | Group 10, Addendum C of this Permit. | |
| **Cesium Nitric Acid Recovery Process System**<br><br>CNP-EVAP-00001 (Cesium Evaporator Separator Vessel) | CNP | **24590-PTF**<br>-3PS-MEVV-T0002, Rev 4<br>-M5-V17T-00014, Rev 2<br>-M6-CNP-00001001, Rev 0<br>-M6-CNP-00001002, Rev. 0<br>-M6-CNP-00001003, Rev. 0<br>-M6-CNP-00002001, Rev 0<br>-M6-CNP-00002002, Rev 0<br>-M6-CNP-00002003, Rev 0<br>-M6-CNP-00008001, Rev 0<br>-M6-CNP-00008002, Rev 0<br>-M6-CNP-00010001, Rev 0<br>-M6-CNP-00010002, Rev 0<br>-MV-CNP-P0001, Rev 0<br>-MV-CNP-P0002, Rev 1<br>-MV-CNP-P0005, Rev 0<br>-MVD-CNP-P0003, Rev 1<br>-MVD-CNP-P0010, Rev 0<br>-MVD-CNP-00006, Rev 6<br>-N1D-CNP-P0005, Rev 1 | 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) |
|---|---|---|---|---|
| | | -N1D-CNP-P0006, Rev 3<br>-N1D-CNP-P0009, Rev 1<br>-N1D-CNP-P0011, Rev 1<br>-P1-P01T-00001, Rev 8<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-P1-P01T-00004, Rev 6 | | |
| **Cesium Nitric Acid Recovery Process System (Cont.)**<br><br>CNP-HX-00001 (Cesium Evaporator Concentrate Reboiler | CNP | **24590-PTF**<br>-3PS-MEVV-T0002, Rev 4<br>-M5-V17T-P0014, Rev 2<br>-M6-CNP-00001001, Rev 0<br>-M6-CNP-00001002, Rev 0<br>-M6-CNP-00001003, Rev 0<br>-M6-CNP-00002001, Rev 0<br>-M6-CNP-00002002, Rev 0<br>-M6-CNP-00002003, Rev 0<br>-M6-CNP-00008, Rev 2<br>-MED-CNP-00003, Rev 4<br>-MED-CNP-00004, Rev 5<br>-MED-CNP-00010, Rev 3<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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 |

**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) |
|---|---|---|---|---|
| **Cesium Nitric Acid Recovery Process System (Cont.)**<br><br>CNP-DISTC-00001 (Cesium Evaporator Nitric Acid Rectifier Column) | CNP | **24590-PTF**<br>-M5-V17T-00014, Rev 2<br>-M6-CNP-00010, Rev 2<br>-N1D-CNP-00001, Rev 1<br>-P1-P01T-00003, Rev 4<br>-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 |
| **Cesium Nitric Acid Recovery Process System (Cont.)**<br><br>CNP-HX-00002 (Cesium Evaporator Primary Condenser)<br><br>CNP-HX-00003 (Cesium Evaporator Inter-Condenser)<br><br>CNP-HX-00004 (Cesium Evaporator After-Condenser) | CNP | **24590-PTF**<br>-M5-V17T-00014, Rev 2<br>-M6-CNP-00001001, Rev 0<br>-M6-CNP-00001002, Rev 0<br>-M6-CNP-00001003, Rev 0<br>-M6-CNP-00002001, Rev 0<br>-M6-CNP-00002002, Rev 0<br>-M6-CNP-00002003, Rev 0<br>-M6-CNP-00008001, Rev 0<br>-M6-CNP-00010, Rev 2<br>-MED-CNP-00003, Rev 4<br>-MED-CNP-00004, Rev 5<br>-MED-CNP-00005, Rev 4<br>-MED-CNP-00010, Rev 3<br>-N1D-CNP-P0002, Rev 1<br>-N1D-CNP-P0003, Rev 1<br>-N1D-CNP-P0012, Rev 1<br>-P1-P01T-00001, Rev 7 | 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<br><br>N/A<br><br>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) |
|---|---|---|---|---|
| | | -P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-P1-P01T-00004, Rev 6<br>-3PS-MEVV- T0002, Rev 4 | | |
| **Treated LAW Evaporation Process System**<br><br>TLP-SEP-00001 (Treated LAW Evaporator Separator Vessel) | TLP | **24590-PTF**<br>-3PS-MEVV- T0001, Rev 2<br>-M5-V17T-00005, Rev 2<br>-M6-TLP-00001, Rev 3<br>-M6-TLP-00002001, Rev 0<br>-M6-TLP-00002002, Rev 0<br>-M6-TLP-00002003, Rev 0<br>-M6-TLP-00002004, Rev 0<br>-M6-TLP-00003001, Rev 0<br>-M6-TLP-00003002, Rev 0<br>-M6-TLP-00003003, Rev 0<br>-M6-TLP-00003004, Rev 0<br>-M6-TLP-00005001, Rev 0<br>-M6-TLP-00005002, Rev 0<br>-M6-TLP-00005003, Rev 0<br>-M6-TLP-00005004, Rev 0<br>-M6-TLP-00005005, Rev 0<br>-M6-TLP-00006001, Rev 0<br>-M6-TLP-00006002, Rev 0<br>-M6-TLP-00006003, Rev 0 | 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) |
|---|---|---|---|---|
| | | -M6-TLP-00006004, Rev 0<br>-M6-TLP-00006005, Rev 0<br>-MVD-TLP-P0001, Rev 2<br>-MVD-TLP-P0002, Rev 2<br>-MVD-TLP-P0004, Rev 1<br>-MVD-TLP-00005, Rev 7<br>-MV-TLP-P0001, Rev 1<br>-MV-TLP-P0002, Rev 1<br>-N1D-TLP-P0001, Rev 2<br>-N1D-TLP-P0005, Rev 3<br>-N1D-TLP-P0006, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4 | | |
| **Treated LAW Evaporation Process System (Cont.)**<br><br>TLP-COND-00001 (Treated LAW Primary Condenser)<br><br>TLP-COND-00002 (Treated LAW Inter-condenser)<br><br>TLP-COND-00003 (Treated LAW After-condenser) | TLP | **24590-PTF**<br>-3PS-MEVV- T0001, Rev 2<br>-M5-V17T-00005, Rev 2<br>-M6-TLP-00002001, Rev 0<br>-M6-TLP-00002002, Rev 0<br>-M6-TLP-00002003, Rev 0<br>-M6-TLP-00002004, Rev 0<br>-M6-TLP-00003001, Rev 0<br>-M6-TLP-00003002, Rev 0<br>-M6-TLP-00003003, Rev 0 | 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) |
|---|---|---|---|---|
| | | -M6-TLP-00003004, Rev 0<br>-M6-TLP-00005001, Rev 0<br>-M6-TLP-00005002, Rev 0<br>-M6-TLP-00005003, Rev 0<br>-M6-TLP-00005004, Rev 0<br>-M6-TLP-00005005, Rev 0<br>-M6-TLP-00006001, Rev 0<br>-M6-TLP-00006002, Rev 0<br>-M6-TLP-00006003, Rev 0<br>-M6-TLP-00006004, Rev 0<br>-M6-TLP-00006005, Rev 0<br>-MED-TLP-P0001, Rev 0<br>-MED-TLP-00002, Rev 4<br>-MED-TLP-00003, Rev 4<br>-MV-TLP-P0001, Rev 1<br>-MV-TLP-P0002, Rev 1<br>-N1D-TLP-P0002, Rev 0<br>-N1D-TLP-P0003, Rev 4<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4 | | |
| **Treated LAW Evaporation Process System (Cont.)**<br><br>TLP-RBLR-00001 (Treated LAW Evaporator Reboiler) | TLP | **24590-PTF**<br>-3PS-MEVV- T0001, Rev 2<br>-M5-V17T-00005, Rev 5 | Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A | 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) |
|---|---|---|---|---|
| | | -MV-TLP-P0001, Rev 1<br>-MV-TLP-P0002, Rev 1<br>-N1D-TLP-P0011, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4 | of Operating Unit Group 10, Addendum C of this Permit. | |
| **Spray Decontamination and Sizing System**<br><br>PIH-TTBL-00001 (Spray Decontamination Turntable)<br>PIH-TTBL-00002 (Remote Repair Turntable<br>PIH-BENCH-00003 (Size Reduction Table)<br><br>This miscellaneous unit is exempt from the requirements of WAC-173-303-640. | PIH | RESERVED | Section 4.2.4.2.1; Table 4-8; and Figure 4A-128 of Operating Unit 10, Chapter 4 of this Permit. | N/A |
| **Hot Cell Waste Management Unit**<br><br>Hot Cell Floor<br><br>This miscellaneous unit is exempt from the requirements of WAC-173-303-640. | NA | RESERVED | Section 4.2.4.1; Table 4-8; and Figure 4A-128 of Operating Unit 10, Chapter 4 of this Permit. | RESERVED |

**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 |
|---|---|---|---|
| **Pretreatment Vessel Vent Process System**<br><br>PVP-SCB-00002 (Vessel Vent Caustic Scrubber) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-M6-PVP-00002, Rev 3<br>-M6-PVP-00017001, Rev 0<br>-M6-PVP-00017002, Rev 0<br>-M6-PVP-00017003, Rev 0<br>-M6-PWD-00044, Rev 3<br>-MKD-PVP-P0002, Rev 2<br>-MVD-PVP-P0001, Rev 0<br>-MV-PVP-P0002, Rev 0<br>-N1D-PVP-P0001, Rev 1<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Pretreatment Vessel Vent Process System (Cont.)**<br><br>PVP-HEME-00001A (Vessel Vent HEME, Mist eliminator)<br><br>PVP-HEME-00001B (Vessel Vent HEME, Mist Eliminator)<br><br>PVP-HEME-00001C (Vessel Vent HEME, Mist Eliminator) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Pretreatment Vessel Vent Process System (Cont.)** | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2 | Section 4.1.2.16; Table C-8; and Figures C1-1, C1-2 and C1-02A of |

**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-HX-00002 (Vessel Vent Scrubbing Liquid Cooler) | | -M6-PVP-00017001, Rev 0<br>-M6-PVP-00017002, Rev 0<br>-M6-PVP-00017003, Rev 0<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-P1-P01T-00004, Rev 6 | Operating Unit Group 10, Addendum C of this Permit. |
| **Pretreatment Vessel Vent Process System (Cont.)**<br><br>PVP-OXID-00001 (Vessel Vent VOC Oxidizer Unit) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-M6-PVP-00017001, Rev 0<br>-M6-PVP-00017002, Rev 0<br>-M6-PVP-00017003, Rev 0<br>-M6-PVP-000018001, Rev 1<br>-M6-PVP-000018002, Rev 0<br>-N1D-PVP-P0002, Rev 1<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Pretreatment Vessel Vent Process System (Cont.)**<br><br>PVP-CLR-00001 (Vessel Vent Aftercooler) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4 | 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 |
|---|---|---|---|
| | | -P1-P01T-00004, Rev 6 | |
| **Pretreatment Vessel Vent Process System (Cont.)**<br><br>PVP-ADBR-00001A (Vessel Vent Carbon Bed Absorber)<br><br>PVP-ADBR-00001B (Vessel Vent Carbon Bed Absorber) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-P1-P01T-00001, Rev 7<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Pretreatment Vessel Vent Process System (Cont.)**<br><br>PVP-FILT-00001 (Vessel Vent Adsorber Outlet Filter) | PVP | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Process Vessel Vent System**<br><br>PVV-HEPA-00001A (Vessel Vent Primary HEPA Filter)<br><br>PVV-HEPA-00001B (Vessel Vent Primary HEPA Filter)<br><br>PVV-HEPA-00002A (Vessel Vent Secondary HEPA Filter) | PVV | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-P1-P01T-P0002, Rev 7 | 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-HEPA-00002B (Vessel Vent Secondary HEPA Filter) | | | |
| **Process Vessel Vent System (Cont.)**<br><br>PVV-FAN-00001A (Vessel Vent Exhaust Fan)<br><br>PVV-FAN-00001B (Vessel Vent Exhaust Fan) | PVV | **24590-PTF**<br>-M5-V17T-00021001, Rev 2<br>-M5-V17T-00021004, Rev 2<br>-P1-P01T-P0002, Rev 7<br>-P1-P01T-00003, Rev 4<br>-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. |
| **Pretreatment Pulse Jet Mixer Exhaust Vent System**<br><br>PJV-HEPA-00001A (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00001B (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00001C (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00001D (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00001E (PJV Primary Exhaust HEPA Filter) | PJV | **24590-PTF**<br>-M5-V17T-00021002, Rev 2<br>-M6-PJV-00001, Rev 3<br>-M6-PJV-00002, Rev 3<br>-M6-PJV-00004001, Rev 0<br>-N1D-PJV-P0001, Rev 1<br>-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. |

**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-00001F (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00001G (PJV Primary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002A (PJV Secondary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002B (PJV Secondary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002C (PJV Secondary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002D (PJV Secondary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002E (PJV Secondary Exhaust HEPA Filter)<br><br>PJV-HEPA-00002F (PJV Secondary Exhaust HEPA Filter) | | | |
| **Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)**<br><br>PJV-FAN-00001A (PJV Exhaust Fan) | PJV | **24590-PTF**<br>-M5-V17T-00021002, Rev 2<br>-M6-PJV-00001, Rev 3<br>-M6-PJV-00002, Rev 3 | 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-FAN-00001B (PJV Exhaust Fan)<br><br>PJV-FAN-00001C (PJV Exhaust Fan) | | -M6-PJV-00004001, Rev 0<br>-N1D-PJV-P0001, Rev 1<br>-P1-P01T-00001, Rev 7 | |
| **Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)**<br><br>PJV-DMST-00002A (PJV Demister)<br><br>PJV-DMST-00002B (PJV Demister)<br><br>PJV-DMST-00002C (PJV Demisters) | PJV | **24590-PTF**<br>-M5-V17T-00021002, Rev 2<br>-M6-PJV-00001, Rev 3<br>-M6-PJV-00002, Rev 3<br>-M6-PJV-00004001, Rev 0<br>-N1D-PJV-P0001, Rev 1<br>-P1-P01T-00003, Rev 4 | 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.

**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 No.'s, Specification No.'s etc.) |
|---|---|---|---|---|
| PVP-ZY-00037-S11B-03, P-0105 (PVP-BULGE-00001, El. 0') | | | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-PVP-00017002, Rev 0 |
| PVP-ZY-00036-S11B-03, P-0101A (PVP-BULGE-00002, El. 0') | | | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-PVP-00018002, Rev 0 |
| PVP-ZY-00056-S11B-03, P-0302 (PVP-BULGE-00014, El. 56') | | | 3"<br>Stainless Steel | **24590-PTF**<br>-M6-PVP-00017003, Rev 0 |
| PWD-FD-00323P-0304 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00324<br>P-0304 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00325<br>P-0304 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00326<br>P-0304 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00327<br>P-0304 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00044, Rev 3 |
| PWD-FD-00512<br>P-0320 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00513<br>P-0320 Drain, El. 56' | 140 | N/A | 6" Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |

| | | | | |
|---|---|---|---|---|
| PWD-FD-00514<br>P-0320 Drain, El. 56’ | 140 | N/A | 6” Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00515<br>P-0325 Drain, El. 56’ | 140 | N/A | 6” Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00516<br>P-0325 Drain, El. 56’ | 140 | N/A | 6” Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00517<br>P-0325 Drain, El. 56’ | 655 | N/A | 8” Dia<br>316L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00557<br>P-0430 Drain, El. 77’ | 140 | N/A | 6” Dia<br>304L | **24590-PTF**<br>-M6-PWD-00043, Rev 3 |
| PWD-FD-00561<br>P-0430 Drain, El. 77’ | 140 | N/A | 6” Dia<br>304L | **24590-PTF**<br>-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 (Descrip-tion & 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:**

[a]Sump 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 |

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

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

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

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

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

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

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

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

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

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

A. Weld breaks.

B. Punctures.

C. Scrapes of protective coatings.

D. Cracks.

E. Corrosion.

F. Other structural damage or inadequate construction/installation.

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

**III.10.H.1.a.v** For the LAW Vitrification System or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the LAW Vitrification System and compacted to ensure that the LAW Vitrification System is fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

**III.10.H.1.a.vi** The Permittees must test for tightness the LAW Vitrification System or components, prior to being covered, enclosed, or placed into use. If the LAW Vitrification System or components are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the LAW Vitrification System being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-III.680(2) and (3)].

**III.10.H.1.a.vii** The Permittees must ensure the LAW Vitrification System equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

**III.10.H.1.a.viii** The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit Group 10, Appendices 9.9 and 9.11 of this Permit, as approved pursuant to Permit Conditions 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., 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 believes other corrosion protection is necessary to ensure the integrity of the LAW Vitrification System during use of the LAW Vitrification System. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

**III.10.H.1.a.ix** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the LAW Vitrification System and supervise the installation of the LAW Vitrification System, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that the LAW Vitrification System and corresponding containment system listed in Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e) were

performed [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

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

A. Field installation report with date of installation.

B. Approved welding procedures.

C. Welder qualification and certifications.

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

E. Tester credentials.

F. Field inspector credentials.

G. Field inspector reports.

H. Field waiver reports.

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

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

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

**III.10.H.1.a.xiii** All process monitors/instruments, as specified in Permit Table III.10.H.F, as 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 approved/modified pursuant to Permit Condition III.10.H.5, in accordance with Operating Unit Group 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.d.x. and III.10.H.5.f.xvi.

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

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

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

**III.10.H.1.a.xviii** For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit 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.H.1.a.xix** For all LAW Vitrification System sub-systems not addressed in Permit Condition III.10.H.1.a.xviii., the Permittees will mark all 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.H.1.a.xx** The Permittees will ensure that the secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A. and III.10.H.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.H.1.a.xxi** 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 Conditions III.10.H.1.a.xxiii.,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.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)].

**III.10.H.1.a.xxii** .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 each LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A and III.10.H.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 mixed waste into the concrete. All coatings will meet the following performance standards:

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

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

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

**III.10.H.1.a.xxiii** The Permittees will inspect all secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5., in accordance with the Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:

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

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of the LAW Vitrification System sub-systems will be, as a minimum, managed as mixed waste.

D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification System sub-system, the Permittees may return the LAW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take action to insure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur [WAC 173-303-320(3)].

E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary LAW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the LAW Vitrification System sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8., or

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.H.1.a.iii.) the LAW Vitrification System, 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., before the LAW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

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

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

**III.10.H.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)]:

A. Reasons for delayed removal.

B. Measures implemented to ensure continued protection of human health and the environment.

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

**III.10.H.1.a.xxv** 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 contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the LAW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets will be established.

**III.10.H.1.a.xxvi** In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-system names with the sub-system designation.

**III.10.H.1.a.xxvii** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of this Permit for the LAW 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., III.10.C.9.e., and III.10.C.9.h.

**III.10.H.1.a.xxviii** For any portion of the LAW Vitrification System which has the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.H.1.a.xxix** For each LAW Vitrification System sub-system holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

**III.10.H.1.b** Performance Standards

**III.10.H.1.b.i** The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1), 40 CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

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

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

Where:

$W_{in}$=mass feed-rate of one principal organic dangerous constituent (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.H.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.H.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.H.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.H.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.H.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.H.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.H.1.b.viii** Carbon monoxide (CO) emission from the LAW Vitrification System will not exceed 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2)].

**III.10.H.1.b.ix** Hydrocarbon emission from the LAW Vitrification System will not exceed 10 parts per million (ppm) 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)].

**III.10.H.1.b.x** If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table III.10.H.E, as approved pursuant to Permit Condition III.10.C.11.b., the Permittees will notify Ecology in accordance with Permit Condition III.10.H.3.d.vii. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

The emission limits specified in Permit Conditions III.10.H.1.b.i. through III.10.H.1.b.ix. above, will be met for the LAW Vitrification System by limiting feed-rates as specified in Permit Tables III.10.H.D. and III.10.H.F., as approved/modified pursuant to Permit Condition III.10.H.5., compliance with operating conditions specified in Permit Condition III.10.H.1.c. (except as specified in Permit Condition III.10.H.1.b.xii.), and compliance with Permit Condition III.10.H.1.b.xi.

**III.10.H.1.b.xi** Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste management units contained in the LAW Building, but not included in Permit Table III.10.H.A, as approved/modified pursuant to Permit Condition III.10.H.5., will be as specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

**III.10.H.1.b.xii** Except during periods of LAW Vitrification System startup and shutdown, compliance with the operating conditions specified in Permit Condition III.10.H.1.c.,will be regarded as compliance with the required performance standards identified in Permit Conditions III.10.H.1.b.i. through x. However, if it is determined that during the effective period of this Permit that compliance with the operating conditions in Permit Condition III.10.H.1.c. is not sufficient to ensure compliance with the performance standards specified in Permit Conditions III.10.H.1.b.i. through x., the Permit may be modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

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

The Permittees will operate the LAW Vitrification System in accordance with Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi., Operating Unit Group 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e., and Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., except as modified

pursuant to Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., III.10.H.4., and in accordance with the following:

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

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

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

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

**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 approved/modified pursuant to Permit Condition III.10.H.5., the Permittees will immediately, manually cut-off the dangerous and mixed waste feed to the LAW Vitrification System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

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

**III.10.H.1.c.vii** If greater than thirty (30) dangerous and mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., within a sixty (60) day period, the Permittees will submit a written report to Ecology within five (5) calendar days of the thirty-first exceedance including the information specified below. These dangerous and mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted if the specified set points are deviated from while dangerous waste, mixed waste, and waste residues continue to be processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.H.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.H.F.

B. The magnitude, dates, and duration of the deviations.

C. Results of the investigation of the cause of the deviations.

D. Corrective measures taken to minimize future occurrences of the deviations.

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

A. Investigate the cause of the bypass event.

B. Take appropriate corrective measures to minimize future bypasses.

C. Record the investigation findings and corrective measures in the operating record.

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

**III.10.H.1.c.ix** The Permittees will control fugitive emissions from the LAW Vitrification System by maintaining the melters under negative pressure.

**III.10.H.1.c.x** Except during periods of vitrification system startup and shutdown, compliance with the operating conditions specified in Permit Condition III.10.H.1.c. will be regarded as compliance with the required performance standards identified in Permit Condition III.10.H.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, will justify modification, revocation, or re-issuance of this Permit, in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

**III.10.H.1.d** Inspection Requirements [WAC 173-303-680(3)]

**III.10.H.1.d.i** The Permittees will inspect the LAW Vitrification System in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

**III.10.H.1.d.ii** The inspection data for LAW Vitrification System will be recorded, and the records will be placed in the WTP Unit operating record for the LAW Vitrification System, in accordance with Permit Condition III.10.C.4.

**III.10.H.1.d.iii** 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 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., and III.10.H.4.

**III.10.H.1.e** Monitoring Requirements [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(3)]

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

**III.10.H.1.e.ii** The Permittees will comply with the monitoring requirements specified in Operating Unit Group 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant 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 Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

**III.10.H.1.e.iii** The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance with Performance Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit Group 10 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition 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., and III.10.H.4.

**III.10.H.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables III.10.H.C, and F, as approved/modified pursuant to Permit Condition III.10.H.5., in accordance with Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition 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., and III.10.H.4.

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

**III.10.H.1.f.i** The Permittees will record and maintain in the WTP Unit operating record for the LAW 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.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

**III.10.H.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cutoffs 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.H.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 LAW Vitrification System;

B. Date/Time of all LAW Vitrification System startups and shutdowns;

C. Date/Time/Duration/Cause/Corrective Action taken for all LAW 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.H.F, as approved/modified pursuant to Permit Condition III.10.H.5.

**III.10.H.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.H.1.e.iii.

**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 feed-rate 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).

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.

**III.10.H.2.c.v** The Permittees will conduct sufficient analysis of the dangerous waste treated in the LAW Vitrification System to verify that the waste feed is within the physical and chemical composition limits specified in this Permit.

**III.10.H.3** **Demonstration Test 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.3.a** Demonstration Test Period

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

**III.10.H.3.a.ii** Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., will be resubmitted to Ecology for approval by the Permittees as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. at least one hundred and eighty (180) days prior to the start date of the demonstration test. The revised Demonstration Test Plan will include applicable EPA promulgated test methods and procedures in effect at the time of the re-submittal and projected commencement and completion dates for the Demonstration Test.

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

**III.10.H.3.b** Performance Standards

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

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

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

**III.10.H.3.c.ii** The Permittees will not feed mixed waste to the LAW Vitrification System.

**III.10.H.3.c.iii** The dangerous waste feed-rates to the LAW Vitrification System will not exceed the limits in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition III.10.H.5.

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

**III.10.H.3.d** Demonstration Data Submissions and Certifications

**III.10.H.3.d.i** The Permittees will submit to Ecology a complete demonstration test report within one-hundred eighty (180) calendar days of completion of the Demonstration Test including all data collected during the Demonstration Test and updated Permit Tables III.10.I.D, III.10.I.E and III.10.I.F.

**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:

A. The Permittees will submit a summary of data collected as required by the Demonstration Test Plan to Ecology upon completion of the Demonstration Test.

B. A certification that the Demonstration Test has been carried out in accordance with the approved Demonstration Test Plan and approved modifications within thirty (30) days of the completion of the Demonstration Test [WAC 173-303-807(8)].

C. Calculations and analytical data showing compliance with the performance standards specified in Permit Conditions III.10.H.1.b.i, III.10.H.1.b.iv, III.10.H.1.b.v, III.10.H.1.b.vi, and III.10.H.1.b.vii

D. Laboratory data QA/QC summary for the information provided in III.10.H.3.d.ii.C.

**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 F, 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.

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

**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.

A. A complete Demonstration Test Report for the LAW Vitrification System and updated Permit Tables III.10.I.D, III.10.I.E, and III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.C.11.c or III.10.C.11.d. The test report will be certified in accordance with WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

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

**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:

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

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

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

D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s), documentation supporting a mode of operation where all 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 met during the demonstration test, if any such mode was demonstrated.

E. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.H.3.d.vi.A through D above, 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 amend the mode of

operation the Permittees are allowed to continue operations prior to Ecology approval of a compliance schedule and/or revised Demonstration Test Plan pursuant to Permit Conditions III.10.H.3.d.vi.F and G.

F. If the performance standard listed in Permit Condition III.10.H.1.b.i. was not met during the Demonstration Test, the Permittees will submit within one hundred and twenty (120) days of discovery of not meeting the performance standard, a revised Demonstration Test Plan (if appropriate), and a compliance schedule for Ecology approval to address this deficiency. If a revised Demonstration Test Plan is submitted, it will be accompanied by a request for approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The revised Demonstration Test Plan (if submitted) must include substantive changes to prevent failure from reoccurring.

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

**III.10.H.3.d.vii** If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.H.E, as approved pursuant to Permit Condition III.10.C.11.b., is exceeded for LAW Vitrification System during the Demonstration Test, the Permittees will perform the following actions:

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 exceedance 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 permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

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

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

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

**III.10.H.4.b.i** The Permittees may feed the dangerous and/or mixed 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, Operating Unit Group 10, Addendum B of this Permit, as approved pursuant to Permit Condition III.10.C.3., and except Permit Conditions III.10.H.4.b.ii. and III.10.H.4.b.iii. also apply.

**III.10.H.4.b.ii** The dangerous waste and mixed waste feed-rates to the LAW Vitrification System will not exceed the limits in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition III.10.H.5., or in Permit Condition III.10.H.3

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

## III.10.H.5 Compliance Schedules

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

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

**III.10.H.5.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. IQRPE Reports will be consistent with the information separately provided in ii. through ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i )];

**III.10.H.5.b.ii** Design drawings (General Arrangement Drawings, in plan) and specifications for the foundation, secondary containment including liner installation details, and leak detection methodology. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

**III.10.H.5.b.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and

below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.b.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.H.5.b.v** Secondary containment/foundation, and leak detection system, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials) as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.H.5.b.vi** Detailed description of how the secondary containment for the LAW Vitrification System will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B);

**III.10.H.5.b.vii** Submit Permit Tables III.10.H.B and III.10.I.B completed to provide for all secondary containment sumps and floor drains the information as specified in each column heading consistent with information to be provided in i. through vi., above;

**III.10.H.5.b.viii** Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.b.ix** A detailed description of how LAW Vitrification System design provides access for conducting future LAW Vitrification System integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-806(4)(i)(i)(B)].

**III.10.H.5.c** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation of each sub-system as identified in Permit Table III.10.H.A, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 9.1 through 9.14, and 9.17 of this Permit. At a minimum, engineering information specified below will show the following, as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.H.5.c.i** IQRPE Reports (specific to sub-system) will include review of design drawings, calculations, and other information on which the certification report is based and will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers.
The IQRPE Reports will be consistent with the information separately provided in ii. through xii. below, and the IQRPE Report specified in Permit Condition III.10.H.5.b. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.H.5.c.ii** Design drawings [General Arrangement Drawings in plan and, Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure control systems), Mechanical Drawings, and specifications, and other information specific to subsystems (to show location and physical attributes of each subsystem)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.H.5.c.iii** Sub-system design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details to support the subsystems. Structural support calculations specific to off-specification, non-standard and field fabricated subsystems will be submitted for incorporation into the Administrative Record. Documentation will include but not limited to, supporting specifications, test data, treatment effectiveness report, etc. supporting projected operational capability (e.g., WESP projected removal efficiency for individual metals, halogens, particulates, etc.) and compliance with performance standards specified in Permit Condition III.10.H.1.b [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.c.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.H.5.c.v** Sub-system materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.H.5.c.vi** Sub-system vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.c.vii** System descriptions related to sub-system units will be submitted for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.c.viii** Mass and energy balance for normal projected operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.c.ix** Detailed description of all potential LAW Vitrification System bypass events including:

A. A report which includes an analysis of credible potential bypass events and recommendations for prevention/minimization of the potential, impact, and frequency of the bypass event to include at a minimum:

1. Operating procedures
2. Maintenance procedures
3. Redundant equipment
4. Redundant instrumentation
5. Alternate equipment
6. Alternate materials of construction

**III.10.H.5.c.x** A detailed description of how the sub-systems will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

**III.10.H.5.c.xi** Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative Record

[WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.c.xii** Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].

**III.10.H.5.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation of equipment for each sub-system as identified in Permit Tables III.10.H.A and III.10.H.B, not addressed in Permit Conditions III.10.H.5.b. or III.10.H.5.c., engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 9.1 through 9.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.H.5.d.i** IQRPE Reports (specific to sub-system equipment) will include a review of design drawings, calculations, and other information as applicable on which the certification report is based. The reports will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will be consistent with the information provided separately in ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.H.5.b. and III.10.H.5.c. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.H.5.d.ii** Design drawings [Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure control systems), specifications and other information specific to equipment (these drawings should include all equipment such as pipes, valves, fittings, pumps, instruments, etc.)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.H.5.d.iii** Sub-system equipment design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the sub-system equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.d.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.H.5.d.v** Materials selection documentation for equipment for each sub-system (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.H.5.d.vi** Vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, for sub-system equipment will be submitted for incorporation into the Administrative Record. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];

**III.10.H.5.d.vii** Sub-system, sub-system equipment, and leak detection system instrument control logic narrative description (e.g., descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

**III.10.H.5.d.viii** System description related to sub-system equipment, and system descriptions related to leak detection systems, for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.d.ix** A detailed description of how the sub-system equipment will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.d.x** For process monitoring, control, and leak detection system instrumentation for the LAW Vitrification System as identified in Permit Tables III.10.H.C. and III.10.H. F., a detailed description of how the process monitoring, control, and leak detection system instrumentation, will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];

**III.10.H.5.d.xi** Mass and energy balance for projected normal operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.d.xii** Documentation that sub-systems equipment are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.H.5.d.xiii** Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.H.5.c.ii. and Permit Conditions III.10.H.5.d.ii., vii., viii., and x. above, will be submitted for incorporation into the Administrative Record.

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

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

**III.10.H.5.e.ii** Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or

the presence of any release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(b).

A. Dangerous waste pipe penetrations that require a penetration seal in accordance with the International Building Code (IBC) and DOE-STD-1066, DOE Standard for Fire Protection Design Criteria, or meet ventilation sealing requirements identified in Table III.10.H.G, are not required to meet the 0.1 gallons per hour within twenty-four (24) hours leak detection rate for those sections of piping that are in contact with approved silicone or equivalent low-permeability seal material.

B. Piping on either side of the penetration seal must meet the requirements of III.10.H.5.e.ii.

C. Revisions (including additions or deletions) to Table III.10.H.G will be submitted to Ecology for review and approval pursuant to Conditions III.10.C.2.e and III.10.C.2.f. Addition of penetration seal locations to Table III.10.H.G. will be approved by Ecology prior to installation of the penetration seal.

**Table III.10.H.G LAW Plant Penetration Seal Location**

| Row Number | Room Number | Orientation | Discipline | Sequence Number |
|---|---|---|---|---|
| **1.** | L0000112 | E | PD | 02097 |
| **2.** | L0000123 | E | PD | 01823 |
| **3.** | L0000123 | E | PD | 01834 |
| **4.** | L0000123 | E | PD | 01828 |
| **5.** | L0000123 | E | PD | 01837 |
| **6.** | L0000123 | E | PD | 01822 |
| **7.** | L0000123 | E | PD | 01824 |
| **8.** | L0000123 | E | PD | 01826 |
| **9.** | L0000123 | E | PD | 01821 |
| **10.** | L0000123 | E | PD | 01825 |
| **11.** | L0000123 | E | PD | 01827 |
| **12.** | L0000123 | E | PD | 01836 |
| **13.** | L0000123 | E | PD | 01820 |
| **14.** | L0000123 | E | PD | 01832 |
| **15.** | L0000123 | S | PD | 01797 |
| **16.** | L0000124 | E | PD | 01843 |
| **17.** | L0000124 | E | PD | 01844 |
| **18.** | L0000124 | E | PD | 01845 |
| **19.** | L0000124 | E | PD | 01842 |
| **20.** | L0000124 | E | PD | 01847 |
| **21.** | L0000124 | E | PD | 01841 |
| **22.** | L0000124 | E | PD | 01846 |

| Row Number | Room Number | Orientation | Discipline | Sequence Number |
|---|---|---|---|---|
| **23.** | L0000124 | E | PD | 01850 |
| **24.** | L0000124 | E | PD | 01848 |
| **25.** | L0000124 | E | PD | 01852 |
| **26.** | L0000124 | E | PD | 01840 |
| **27.** | L0000124 | E | PD | 01839 |
| **28.** | L0000124 | E | PD | 01849 |
| **29.** | L0000124 | S | PD | 01801 |
| **30.** | L0000125 | E | PD | 01858 |
| **31.** | L0000125 | E | PD | 01859 |
| **32.** | L0000125 | E | PD | 01860 |
| **33.** | L0000125 | E | PD | 01857 |
| **34.** | L0000125 | E | PD | 01862 |
| **35.** | L0000125 | E | PD | 01856 |
| **36.** | L0000125 | E | PD | 01861 |
| **37.** | L0000125 | E | PD | 01865 |
| **38.** | L0000125 | E | PD | 01863 |
| **39.** | L0000125 | E | PD | 01867 |
| **40.** | L0000125 | E | PD | 01855 |
| **41.** | L0000125 | E | PD | 01854 |
| **42.** | L0000125 | E | PD | 01864 |
| **43.** | L0000126 | S | PD | 01807 |
| **44.** | L0000201 | F | PD | 02405 |
| **45.** | L0000201 | S | PD | 02406 |
| **46.** | L0000202 | F | PD | 02495 |
| **47.** | L0000216 | W | PD | 02674 |
| **48.** | L0000220 | E | PD | 02709 |
| **49.** | L0000301 | F | PD | 03319 |
| **50.** | L0000301 | S | PD | 03437 |
| **51.** | L0000301 | S | PD | 04149 |
| **52.** | L0000301 | S | PD | 04141 |
| **53.** | L000101A | F | PD | 01291 |
| **54.** | L000101A | F | PD | 01292 |
| **55.** | L000101A | W | PD | 01971 |
| **56.** | L000226B | F | PD | 02445 |
| **57.** | L000226B | F | PD | 02444 |
| **58.** | L000304F | F | PD | 03278 |
| **59.** | L000304F | F | PD | 03277 |
| **60.** | LB00001B | E | EQ | 80908 |
| **61.** | LB00001B | S | PD | 00196 |

| Row Number | Room Number | Orientation | Discipline | Sequence Number |
|---|---|---|---|---|
| **62.** | LB00001B | S | PD | 00201 |
| **63.** | LC000201 | F | PD | 02430 |

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

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

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

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

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

**III.10.H.5.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated throughout the LAW Vitrification system, pursuant to WAC 173-303-380.

**III.10.H.5.e.ix** Permit Tables III.10.H.C and III.10.I.C will be completed for LAW Vitrification System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b., and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**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 173-303-806(4)(i)(i)(A) through (B)]:

A. Under column 1, update and complete list of dangerous and mixed waste LAW Vitrification System sub-systems, including plant items that comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the ‘Reserved’ with Operating Unit Group 10, Appendix 9.0 subsections (e.g., 9.1, 9.2, etc.) designated in Permit Conditions III.10.H.5.b., c., and d. specific to LAW Vitrification System sub-system as listed in column 1.

D. Under column 4, update and complete list of narrative description, tables, and figures.

**III.10.H.5.f** One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit for review and receive approval for incorporation into Operating Unit Group 10, Appendix 9.15 of this Permit, a Demonstration Test Plan for the LAW Vitrification System to demonstrate that the LAW Vitrification Systems meets the performance standards specified in Permit Condition III.10.H.1.b. In order to incorporate the Demonstration Test Plan for the LAW Vitrification System into Operating Unit Group 10, Appendix 9.15, Permit Condition III.10.C.2.g. process will be followed. The Demonstration Test Plan will include, but not be limited to, the following information. The Demonstration Test Plan will also be consistent with the information provided pursuant to Permit Conditions III.10.H.5.b., c., d., and e., III.10.C.3.e., and III.10.C.11.b., as approved by Ecology and consistent with the schedule described in Operating Unit Group 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition III.10.H.5.f.x., in addition to being incorporated into Operating Unit Group 10, Appendix 9.15, will be incorporated by reference in Operating Unit Group 10, Addendum E of this Permit.

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

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

**III.10.H.5.f.i** Analysis of each feed-stream to be fed during the demonstration test, including dangerous waste, glass formers and reductants, process streams (e.g., volumes of air leakage including control air, process air, steam, sparge bubbler air, air in-leakage from melter cave, and gases from LAW Vitrification Vessel Ventilation System, process water, etc.) that includes:

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

B. Description of the physical form of the feed-streams.

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

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

**III.10.H.5.f.ii** Specification of trial principal organic dangerous constituents (PODCs) for which destruction and removal efficiencies are proposed to be calculated during the demonstration test and for inclusion in Permit Conditions III.10.H.1.b.i. and III.10.I.1.b.i.

These trial PODCs will be specified based on destructibility, concentration or mass in the waste and the dangerous waste constituents or constituents in WAC 173-303-9905;

**III.10.H.5.f.iii** A description of the blending procedures, prior to introducing the feed-streams into the melter, including analysis of the materials prior to blending, and blending ratios;

**III.10.H.5.f.iv** A description of how the surrogate feeds are to be introduced for the demonstration. This description should clearly identify the differences and justify how any of differences would impact the surrogate feed introduction as representative of how mixed waste feeds will be introduced;

**III.10.H.5.f.v** A detailed engineering description of the LAW Vitrification System, including:

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

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

C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections) and General Arrangement Drawings.

D. Process Engineering Descriptions.

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.

F. Engineering Specifications/data sheets (materials of construction, physical and chemical tolerances of equipment, and fan curves).

G. Detailed Description of Automatic Waste Feed Cutoff System addressing critical operating parameters for all performance standards specified in Permit Condition III.10.H.1.b.

H. Documentation to support compliance with performance standards specified in Permit Condition III.10.H.1.b., including engineering calculations, test data, and manufacturer/vendor's warranties, etc..

I. Detailed description of the design, operation, and maintenance practices for air pollution control system.

J. Detailed description of the design, operation, and maintenance practices of any stack gas monitoring and pollution control monitoring system.

**III.10.H.5.f.vi** Detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis including, but not limited to:

A. A short summary narrative description of each stack sample method should be included within the main body of the demonstration test plan, which references an appendix to the plan that would include for each sampling train: (1) detailed sample method procedures, (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4) detailed analytical method procedures, and (5) sampling preparation and analysis flow sheet. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials

of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, enhancements to train to accommodate high moisture content in stack gas, etc.) and what is being proposed along with the basis for the decision.

B. A short summary narrative description of the feed and residue sampling methods should be included within the main body of the demonstration test plan, which references an appendix that would include for each sample type: (1) detailed sample method procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical method procedures. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, etc.) and what is being proposed along with the basis for the decision.

**III.10.H.5.f.vii** A detailed test schedule for each condition for which the demonstration test is planned, including projected date(s), duration, quantity of dangerous waste to be fed, and other relevant factors.

**III.10.H.5.f.viii** A detailed test protocol including, for each test condition, the ranges of feed-rate for each feed system, and all other relevant parameters that may affect the ability of the LAW Vitrification System to meet performance standards specified in Permit Condition III.10.H.1.b.

**III.10.H.5.f.ix** A detailed description of planned operating conditions for each demonstration test condition, including operating conditions for shakedown, demonstration test, post-demonstration test and normal operations. This information will also include submittal of Permit Tables III.10.H.D, III.10.H.F, III.10.I.D, and III.10.I.F completed with the information as specified in each column heading for each LAW Vitrification System waste feed cutoff parameter and submittal of supporting documentation for Permit Tables III.10.H.D, III.10.H.F, III.10.I.D, and III.10.I.F set-point values.

**III.10.H.5.f.x** The test conditions proposed must demonstrate meeting the performance standards specified in Permit Condition III.10.H.1.b. with the simultaneous operation of both melters at capacity and input from the LAW Vitrification Vessel Ventilation System at capacity to simulate maximum loading to the LAW Vitrification System off-gas treatment system and to establish the corresponding operating parameter ranges. To the extent that operation of one (1) melter or two (2) melters cannot be sustained within the operating parameter range established at this maximum load, additional demonstration test conditions must be included in the plan and performed to establish operating parameter ranges for each proposed operating mode while demonstrating meeting the performance standards specified in Permit Condition III.10.H.1.b..

**III.10.H.5.f.xi** Detailed description of procedures for start-up and shutdown of waste feed and controlling emissions in the event of an equipment malfunction, including off-normal and emergency shutdown procedures.

**III.10.H.5.f.xii** A calculation of waste residence time.

**III.10.H.5.f.xiii** Any request to extrapolate metal feed-rate limits from Demonstration Test levels must include:

A. A description of the extrapolation methodology and rationale for how the approach ensures compliance with the performance standards as specified in Permit Condition III.10.H.1.b.

B. Documentation of the historical range of normal metal feed-rates for each feed stream.

C. Documentation that the level of spiking recommended during the demonstration test will mask sampling and analysis imprecision and inaccuracy to the extent that extrapolation of feed-rates and emission rates from the Demonstration Test data will be as accurate and precise as if full spiking were used.

**III.10.H.5.f.xiv** Documentation of the expected levels of constituents in LAW Vitrification System input streams including, but not limited to, waste feed, glass former and reactants, control air, process air, steam, sparge bubbler air, air in-Leakage from melter cave, gases from LAW Vitrification Vessel Ventilation System, and process water.

**III.10.H.5.f.xv** Documentation justifying the duration of the conditioning required to ensure the LAW Vitrification System had achieved steady-state operations under Demonstration Test operating conditions.

**III.10.H.5.f.xvi** Documentation of LAW Vitrification System process and leak detection system instruments 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 include:

A. Procurement specifications.

B. Location used.

C. Range, precision, and accuracy.

D. Detailed descriptions of calibration/functionality test procedures (either method number ASTM) or provide a copy of manufacturer's recommended calibration procedures.

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.).

F. Equipment instrument control logic narrative description (e.g., descriptions of failsafe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

**III.10.H.5.f.xvii** Outline of demonstration test report.

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**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 |
|---|---|---|---|
| **LAW Melter Process System**<br><br>LMP-MLTR-00001 (LAW Melter 1)<br><br>LMP-MLTR-00002 (LAW Melter 2) | LMP | **24590-LAW**<br>-CM-HC4-HXYG-00240-02-00014. Rev/ -<br>-M0D-LMP-00001, Rev. 3<br>-M0D-LMP-00002, Rev. 3<br>-M6-LMP-00001001, Rev 0<br>-M6-LMP-00002001, Rev 0<br>-M6-LMP-00002002, Rev 0<br>-M6-LMP-00031001, Rev 0<br>-M6-LMP-00032001, Rev 0<br>-M6-LMP-00032002, Rev 0<br>-MF-LMP-00001, Rev. 0<br>-MF-LMP-00002, Rev. 0<br>-MP-LMP-00003, Rev. 0<br>-MP-LMP-00004, Rev. 0<br>-3PS-AE00-T0001, Rev. 6<br>-3PN-LMP-00002<br>-N1D-LMP-00001, Rev. 1<br>-P1-P01T-00002, Rev 7 | Section 4.1.3.2, Table C-8, and Figures C1-1,<br>C1-3 and C1-21 in Operating Unit Group 10, Addendum C of this Permit. |
| **LAW Primary Offgas Process System**<br><br>LOP-FCLR-00001 (Melter 1 Primary Film Cooler)<br><br>LOP-FCLR-00002 (Melter 1Standby Film Cooler No. 2) | LOP | **24590-LAW**<br>-P1-P01T-00002, Rev 7<br>-M6-LOP-00004001, Rev 0<br>-M6-LOP-00004002, Rev 0<br>-M6-LOP-00005001, Rev 0<br>-M6-LOP-00005002, Rev 0 | 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. |

**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 |
|---|---|---|---|
| LOP-FCLR-00003 (Melter 2 Primary Film Cooler)<br><br>LOP-FCLR-00004 (Melter 2 Standby Film Cooler) | | | |
| **LAW Primary Offgas Process System (Cont.)**<br><br>LOP-SCB-00001 (Melter 1 Submerged Bed Scrubber)<br><br>LOP-SCB-00002 (Melter 2 Submergered Bed Scrubber) | LOP | **24590-LAW**<br>-M5-V17T-P0007, Rev 0<br>-M5-V17T-P0008, Rev 0<br>-M6-LOP-00001001, Rev 0<br>-M6-LOP-00002001, Rev 0<br>-MK-LOP-P0001001, Rev 0<br>-MK-LOP-P0001002, Rev 0<br>-MK-LOP-P0001003, Rev 0<br>-MKD-LOP-P0008, Rev 0<br>-NID-LOP-P0001, Rev 1<br>-P1-P01T-00002, Rev 7 | 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. |
| **LAW Primary Offgas Process System (Cont.)**<br><br>LOP-WESP-00001 (Melter 1 Wet Electrostatic Precipitator - WESP)<br><br>LOP-WESP-00002 (Melter 2 Wet Electrostatic Precipitator -WESP) | LOP | **24590-LAW**<br>-M5-V17T-P0007, Rev 0<br>-M5-V17T-P0008, Rev 0<br>-M6-LOP-00001004, Rev 0<br>-M6-LOP-00002004, Rev 0<br>-NID-LOP-00003, Rev 3<br>-P1-P01T-00002, Rev 7<br>**24590-WTP**<br>-3PS-MKE0-T0001, Rev 5 | 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 |
|---|---|---|---|
| **LAW Secondary Offgas/Vessel Vent Process System**<br><br>LVP-HEPA-00001A (Melter Offgas HEPA Filter)<br><br>LVP-HEPA-00001B (Melter Offgas HEPA Filter)<br><br>LVP-HEPA-00002A (Melter Offgas HEPA Filter)<br>LVP-HEPA-00002B (Melter Offgas HEPA Filter)<br><br>LVP-HEPA-00003A (Melter Offgas HEPA Filter) | LVP | **24590-LAW**<br>-M5-V17T-00010, Rev 4<br>-M6-LVP-00001003, Rev 0<br>-P1-P01T-00005, Rev 6 | Section 4.1.3.3, Table C-8, Figures C1-1 and<br>C1-3 in Operating Unit Group 10, Addendum C of this Permit. |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-SCO-00001 (Thermal Catalytic Oxidizer – located on LVP-SKID-00002) | LVP | **24590-LAW**<br>-M6-LVP-00005002, Rev 3 | Section 4.1.3.3, Table C-8, Figures C1-1 and<br>C1-3 in Operating Unit Group 10, Addendum C of this Permit. |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-SCR-00001 (NOx Selective Catalytic Reduction Unit – located on LVP-SKID-00002) | LVP | **24590-LAW**<br>-M6-LVP-00005002, Rev 3 | 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 |
|---|---|---|---|
| LVP-HX-00001 (Catalytic Oxidizer Heat Exchanger – located on LVP-SKID-00002)<br><br>LVP-HTR-00002 (Catalytic Oxidizer Electric Heater – located on LVP-SKID-00002) | | | |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-ADBR-00001A (Offgas Mercury Adsorber – located on LVP-SKID-00001)<br><br>LVP-ADBR-00001B (Offgas Mercury Adsorber – located on LVP-SKID-00001) | LVP | **24590-LAW**<br>-M5-V17T-00011, Rev 5<br>-M6-LVP-00004003, Rev 0<br>-P1-P01T-00005, Rev 6 | 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. |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-SCB-00001 (Melter Offgas Caustic Scrubber) | LVP | **24590-LAW**<br>-P1-P01T-00005, Rev 6<br>-M6-LVP-00002002, Rev 0 | 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. |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-HTR-00001A (Melter Offgas HEPA Preheater) | LVP | **24590-LAW**<br>-M5-V17T-00010, Rev 4<br>-M6-LVP-00001002, Rev 0<br>-P1-P01T-00005, Rev. 6 | 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 |
|---|---|---|---|
| LVP-HTR-00001B (Melter Offgas HEPA Preheater) | | | |
| **LAW Secondary Offgas/Vessel Vent Process System (Cont.)**<br><br>LVP-EXHR-00001A (Melter Offgas Exhauster)<br><br>LVP-EXHR-00001B (Melter Offgas Exhauster)<br>LVP-EXHR-00001C (Melter Offgas Exhauster) | LVP | **24590-LAW**<br>-M5-V17T-00010, Rev 4<br>-M6-LVP-00001004, Rev 0<br>-M6-LVP-00001005, Rev 0<br>-M6-LVP-00001006, Rev 0<br>-P1-P01T-00005, Rev 6 | 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.B - LAW Vitrification Miscellaneous Unit System Secondary Containment 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.) |
|---|---|---|---|
| RLD-SUMP-00029<br>L-0123 (Process Cell, El. +3') | 37 | 30" Dia. By 12" deep<br>Stainless Steel (6% Mo) | **24590-LAW**<br>-M6-RLD-00003002<br>-P1-P01T-00002 |
| RLD-SUMP-00030<br>L-0123 (Process Cell, El. +3') | 37 | 30" Dia. By 12" deep<br>Stainless Steel (6% Mo) | **24590-LAW**<br>-M6-RLD-00003002<br>-P1-P01T-00002 |
| RLD-SUMP-00031<br>L-0124 (Process Cell Sump, El. +3') | 37 | 30" Dia. By 12" deep<br>Stainless Steel (6% Mo) | **24590-LAW**<br>-M6-RLD-00003002<br>-P1-P01T-00002 |
| RLD-SUMP-00032<br>L-0124 (Process Cell, El. +3') | 37 | 30" Dia. By 12" deep<br>Stainless Steel (6% Mo) | **24590-LAW**<br>-M6-RLD-00003002<br>-P1-P01T-00002 |
| LOP-FD-00001<br>L-0123 (LOP-BULGE-00001 Drain El. +3') | N/A | 2" Dia.<br>6% Mo | **24590-LAW**<br>-M6-LOP-00001003 |
| RLD-WS-20037-S11B-01<br>L-0123 (Melter 1 Encasement Assembly Drain, El. +3') | N/A | 1" Dia.<br>316L | **24590-LAW**<br>-M6-LMP-00012001 |
| LOP-FD-00002<br>L-0124 (LOP-BULGE-00002 Drain, El. +3') | N/A | 2" Dia.<br>6% Mo | **24590-LAW**<br>-M6-LOP-00002003 |
| RLD-WS-20033-S11B-01<br>L-0124 (Melter 2 Encasement Assembly Drain, El. +3') | N/A | 1" Dia.<br>316L | **24590-LAW**<br>-M6-LMP-00042001 |

**Table III.10.H.B - LAW Vitrification Miscellaneous Unit System Secondary Containment 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.) |
|---|---|---|---|
| RLD-FD-00025<br>L-0304F (Curb Floor Drain for Caustic Scrubber, El. 48') | N/A | 4" Dia.<br>316L | **24590-LAW**<br>-M6-RLD-00003001 |

**Footnotes:**
[a]Dimensions listed are based on permitted design. Actual dimensions may vary within acceptable design tolerances.

**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 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 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 |
| | | 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-00037002 | Melter 2 West Canister Level | Level Element (IR Camera) | LE-2466 | TBD | TBD | TBD | TBD | TBD |
| | | 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 | | | | | |
| 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 |
| | | | LAH 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 | | | | | |
| | | 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 Feed-rates to LAW Vitrification System (RESERVED)**

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

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

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

**TABLE III.10.H.F - LAW Vitrification System Waste Feed Cutoff Parameters* 1 (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:**

* A continuous monitoring system will be used as defined in Permit Section III.10.C.1.

[1] 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.

## III.10.I LAW VITRIFICATION SYSTEM – LONG TERM MISCELLANEOUS THERMAL TREATMENT UNIT

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

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

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

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

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

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

**III.10.I.1.a.iii** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of this Permit for the LAW 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.

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

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

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that

the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

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

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

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

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

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

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

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

**III.10.I.1.a.xii** For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit 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:

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

B. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or

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

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

**III.10.I.1.a.xvii** The Permittees inspect all 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, in accordance with the Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)].

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

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The waste removed from containment areas of the LAW Vitrification System sub-systems will be, as a minimum, managed as dangerous and/or mixed waste.

D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification System sub-system, the Permittees may return the LAW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur.

E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary LAW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the LAW Vitrification System sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.I.1.a.iii.) the LAW Vitrification System 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., before the LAW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

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

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

**III.10.I.1.a.xviii** 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)]:

A. Reasons for delayed removal.

B. Measures implemented to ensure continued protection of human health and the environment.

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

**III.10.I.1.a.xix** 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 contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the LAW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets will be established.

**III.10.I.1.a.xx** In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-system names with the sub-system designation.

**III.10.I.1.a.xxi** For any portion of the LAW Vitrification System that has the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.I.1.a.xxii** For each LAW Vitrification System sub-system holding dangerous and/or mixed waste that are acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

**III.10.I.1.a.xxiii** The existing LAW building will retain capability to install the third melter before or after hot start-up. No permanent systems, structures, or components shall be installed in the melter cell, pour cave or wet process cell for the third melter that would preclude future installation of the third melter.

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

**III.10.I.1.b.i** The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and 40CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

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

DRE=[1-(Wout/Win)] x 100%

Where:

Win=mass feed rate of one principal organic dangerous constituent (PODC) in a waste feed stream; and

Wout=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 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2) and (3)];

**III.10.I.1.b.ix** Hydrocarbon emission from the LAW Vitrification System will not exceed 10 parts per million (ppm) 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 exceedance 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).

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 permit modification pursuant to Permit Conditions III.10.C.2.e. through g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

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

**III.10.I.1.b.xi** Treatment effectiveness, feed-rates and operating rates for dangerous and/or mixed waste management units contained in the LAW Building, but not included in Permit Table III.10.I.A, as approved/modified pursuant to Permit Condition III.10.H.5, will be as specified in Permit Sections III.10.D through F and consistent with assumptions and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit Condition III.10.C.11.c or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)];

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

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

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

**III.10.I.1.c.i** The Permittees will operate the LAW Vitrification System in order to maintain the systems and process parameters listed in Permit Tables III.10.I.C and III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within the set-points specified in Permit Table III.10.I.F.

**III.10.I.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW

Vitrification System when the monitored operating conditions deviate from the set-points specified in Permit Table III.10.I.F.

**III.10.I.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW Vitrification System when all instruments specified in Permit Table III.10.H.F for measuring the monitored parameters fails or exceeds its span value.

**III.10.I.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock out the dangerous waste and/or mixed waste feed to the LAW Vitrification System when any portion of the LAW Vitrification System is bypassed. The terms "bypassed" and "bypass event," as used in Permit Sections III.10.H and III.10.I, will mean if any portion of the LAW Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.

**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 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., the Permittees will immediately, manually cut-off the dangerous and/or mixed waste feed to the LAW Vitrification System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

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

**III.10.I.1.c.vii** If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within a sixty (60) day period, the Permittees will submit a written report to Ecology within five (5) calendar days of the thirty-first exceedance, including the information specified below. These dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified in Permit Table III.10.I.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.I.F.

B. The magnitude, dates, and duration of the deviations.

C. Results of the investigation of the cause of the deviations.

D. Corrective measures taken to minimize future occurrences of the deviations.

**III.10.I.1.c.viii** If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within a thirty (30) day period, the Permittees will submit the written report required to be submitted pursuant to Permit Condition III.10.I.1.c.vii. to Ecology on the first business day following the thirty-first exceedance. These dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are

counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.I.F, from which the set-point is deviated:

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

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

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

1. The Permittees written report does not document that the corrective measures taken will minimize future exceedances.

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

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

A. Investigate the cause of the bypass event.

B. Take appropriate corrective measures to minimize future bypasses.

C. Record the investigation findings and corrective measures in the WTP Unit operating record.

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

**III.10.I.1.c.x** The Permittees will control fugitive emissions from the LAW Vitrification System by maintaining the melters under negative pressure.

**III.10.I.1.c.xi** Except during periods of vitrification system startup and shutdown, compliance with the operating conditions specified in Permit Condition III.10.I.1.c. will be regarded as compliance with the required performance standards identified in Permit Condition III.10.I.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, will justify 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.

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

**III.10.I.1.d.i** The Permittees will inspect the LAW Vitrification System in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

**III.10.I.1.d.ii** The inspection data for LAW Vitrification System will be recorded, and the records will be placed in the WTP Unit operating record for LAW Vitrification System, in accordance with Permit Condition III.10.C.4.

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

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., and III.10.I.1.h.

**III.10.I.1.e** Monitoring Requirements [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(3)]

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

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

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

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

**III.10.I.1.e.v** The Permittees shall calibrate, inspect, and maintain or replace the following Melter 1 and Melter 2 cooling water flow and temperature instruments in accordance with manufacturer's recommendations, or as specified in this permit, or otherwise agreed to by Ecology (Melter 1: FT/TI&FI-1206, FT/TI&FI-1209, FT/TI&FI-1215, FT/TI&FI-1218, FT/TI&FI-1221, FT/TI&FI-1224, FT/TI&FI-1227, FT/TI&FI-1233, FT/TI&FI-1236, FT/TI&FI-1536, FT/TI&FI-1539; Melter 2: FT/TI&FI-2206, FT/TI&FI-2209, FT/TI&FI-2215, FT/TI&FI-2218, FT/TI&FI-2221, FT/TI&FI-2224, FT/TI&FI-2227, FT/TI&FI-2233, FT/TI&FI-2236, FT/TI&FI-2536, FT/TI&FI-2539).

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

**III.10.I.1.f.i** The Permittees will record and maintain in the WTP Unit operating record for the LAW 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 5, as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.

**III.10.I.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cutoffs 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.I.1.f.iii** The Permittees will submit to Ecology an annual report each calendar year within ninety (90) days following the end of the year. The report will include the following information:

A. Total dangerous and/or mixed waste feed processing time for the LAW Vitrification System.

B. Date/Time of all LAW Vitrification System startups and shutdowns.

C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns caused by malfunction of either process or control equipment.

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.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.

**III.10.I.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.I.1.e.iii.

**III.10.I.1.f.v** The Permittees shall maintain operating and calibration/maintenance records for Ecology's inspection for the following Melter 1 and Melter 2 cooling water flow and temperature instruments (Melter 1: FT/TI&FI-1206, FT/TI&FI-1209, FT/TI&FI-1215, FT/TI&FI-1218, FT/TI&FI-1221, FT/TI&FI-1224, FT/TI&FI-1227, FT/TI&FI-1233, FT/TI&FI-1236, FT/TI&FI-1536, FT/TI&FI-1539; Melter 2: FT/TI&FI-2206, FT/TI&FI-2209, FT/TI&FI-2215, FT/TI&FI-2218, FT/TI&FI-2221, FT/TI&FI-2224, FT/TI&FI-2227, FT/TI&FI-2233, FT/TI&FI-2236, FT/TI&FI-2536, FT/TI&FI-2539).

**III.10.I.1.f.vi** The Permittees shall maintain refractory thermocouple temperature data for Ecology inspection.

**III.10.I.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.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)]

**III.10.I.1.h.i** Dioxin and Furan Emission Testing

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

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F (as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.), that were established to maintain compliance with Permit Condition III.10.I.1.b.iv. as specified in Operating Unit Group 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Condition III.10.H.3.d., and in accordance with III.10.I.1.b.xii. and III.10.I.1.c.xi.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste.

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.I.D (as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.). Feed-rate of organics as measured by TOC are held within the range of the average value over the previous twelve (12) months. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include data obtained when not processing dangerous and/or mixed waste.

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

B. Within sixty (60) days of Ecology's approval of the DFETP, or within thirty-one (31) months of commencing operation pursuant to Permit Section III.10.I, whichever is later, the Permittees will implement the DFETP approved pursuant to Permit Condition III.10.I.1.h.i.A.

C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition III.10.I.1.h.i.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for dioxin and furan emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f. at twenty-four (24) months from the implementation date of the testing required pursuant to Permit Condition III.10.I.1.h.i.A and at reoccurring eighteen (18) month intervals from the implementation date of the previously approved DFETP. The Permittees will implement these newly approved revised DFETPs, every thirty-one (31) months from the previous approved DFETP implementation date or within sixty (60) days of the newly Ecology approved revised DFETP, whichever is later, for the duration of this Permit.

D. The Permittees will submit a summary of operating data collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports

will be certified as specified in WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C. show that one or more of the performance standards listed in Permit Condition III.10.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the emission test, the Permittees will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s).

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

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

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

5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.i.E.1 through 4 above, and any additional information, Ecology may provide in writing, direction to the Permittees to stop dangerous waste and mixed waste feed to the LAW Vitrification System and/or amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10. I.1.h.i.E.6.

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e.and III.10.C.2.f. The revised Demonstration Test Plan 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.I.D and F.

F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.C.11.c. or d. is exceeded for LAW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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.

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s).

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 LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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.I.D and III.10.I.F.

**III.10.I.1.h.ii** Non-organic Emission Testing

A. Within forty-eight (48) months of commencing operation pursuant to Permit Section III.10.I, the Permittees will resubmit to Ecology for approval the "Previously Approved Demonstration Test Plan" revised as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2f. The revised Demonstration Test Plan (RDTP) will include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, projected commencement and completion dates for emission testing to demonstrate performance standards specified in Permit Conditions III.10.I.1.b.ii., iii., v., vi., and vii., and non-organic emissions as specified in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., under "Normal Operating Conditions." "Normal Operating Conditions" will be defined for the purposes of this permit condition as follows:

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.I.1.b.ii., iii., v., vi., and vii., and non-organic emissions, as specified in Permit Table III.10.I.E, as specified in Operating Unit Group 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous or mixed waste.

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

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

B. Within sixty (60) days of Ecology's approval of the RDTP, or within sixty (60) months of commencing operation pursuant to Permit Section III.10.I, whichever is later, the Permittees will implement the RDTP approved pursuant to Permit Condition III.10.I.1.h.ii.A.

C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition III.10.I.1.h.ii.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. at forty-eight (48) months from the implementation date of the testing required pursuant to Permit Condition III.10.I.1.h.ii.A and at reoccurring forty-eight (48) month intervals from the implementation date of the previously approved RDTP. The Permittees will implement these newly approved revised RDTP, every sixty (60) months from the previous approved RDTP implementation date or within sixty (60) days of the newly Ecology approved revised RDTP, whichever is later, for the duration of this Permit.

D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports will be certified pursuant to WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., is exceeded for LAW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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;

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s); and

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 LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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.I.D and III.10.I.F.

F. If any calculations or testing results collected pursuant to the RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C show that one or more of the performance standards listed in Permit Condition III.10.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the emission test, the Permittees will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s);
2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified in Permit condition I.E.21;
3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s);
4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were met during the demonstration test, if any such mode was demonstrated;
5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.ii.F.1 through 4 above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10.I.1.h.ii.F.6; and
6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan 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.I.D and F.

**III.10.I.1.h.iii** Other Emission Testing

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

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Condition III.10.H.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.I.1.b.viii. and ix., and emissions as specified in Permit Table III.10.I.E, not addressed under Permit Conditions III.10.I.1.h.i. or ii. as specified in Operating Unit Group 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.3.d., and in accordance with Permit Conditions III.10.I.1.b.xii. and III.10.I.1.c.xi. are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.I.F. The average value is defined as the sum of all rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste.

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

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

B. Within sixty (60) days of Ecology's approval of the RDTP, or within ninety-one (91) months of commencing operation pursuant to Permit Section III.10.I, whichever is later, the Permittees will implement the RDTP approved pursuant to Permit Condition III.10.I.1.h.iii.A.

C. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Condition III.10.I.1.h.iii.A to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports will be certified as specified in WAC 173-303-807(8), in accordance with Permit Condition WAC 173-303-680(2) and (3).

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

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s);

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

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

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

5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.iii.D.1 through 4 above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan, pursuant to Permit Condition III.10. I.h.1.iii.D.6.

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan 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.I.D and III.10.I.F.

E. If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.C.11.c. or d., is exceeded for LAW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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.

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of the exceedance of the emission rate(s).

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 LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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.I.D and F.

**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 Feedrates | RESERVED |

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

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

**TABLE III.10.I.F - LAW Vitrification System Waste Feed Cut-off Parameters***
**[1](RESERVED)**

| Sub-system Designation | Instrument Tag Number | Parameter Description | Set-points During Normal Operation |
|---|---|---|---|
| RESERVED | RESERVED | RESERVED | RESERVED |

**Footnotes:**

*A continuous monitoring system will be used as defined in Permit Section III.10.C.1.

[1]Maximum 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

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

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

### III.10.J.1 III.10.I.1.h.General Conditions During Shakedown, Demonstration Test, and Post-Demonstration Test for HLW Vitrification System

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

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

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

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

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

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

**III.10.J.1.a.iv** The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the HLW Vitrification System during installation. Prior to covering, enclosing, or placing the new HLW Vitrification System or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation

of similar systems or components, must inspect the system for the presence of any of the following items:

A. Weld breaks
B. Punctures
C. Scrapes of protective coatings
D. Cracks
E. Corrosion
F. Other structural damage or inadequate construction/installation

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

**III.10.J.1.a.v** For the HLW Vitrification System or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the HLW Vitrification System and compacted to ensure that the HLW Vitrification System is fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

**III.10.J.1.a.vi** The Permittees must test for tightness the HLW Vitrification System or components, prior to being covered, enclosed, or placed into use. If the HLW Vitrification System or components are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be 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)].

**III.10.J.1.a.vii** The Permittees must ensure the HLW Vitrification System equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

**III.10.J.1.a.viii** The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit Group 10, Appendices 10.9 and 10.11 of this Permit, as approved pursuant to Permit Conditions 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., 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 believes other corrosion protection is necessary to ensure the integrity of the HLW Vitrification System during use of the HLW Vitrification System. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

**III.10.J.1.a.ix** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the HLW Vitrification System and supervise the installation of the HLW Vitrification System, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that the HLW Vitrification system and corresponding containment system listed in Permit Tables III.10.J.A and III.10.J.B, as approved/modified pursuant to Permit Condition III.10.J.5., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e), were

performed [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

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

A. Field installation report with date of installation.
B. Approved welding procedures.
C. Welder qualification and certifications.
D. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
E. Tester credentials.
F. Field inspector credentials.
G. Field inspector reports.
H. Field waiver reports.
I. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

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

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

**III.10.J.1.a.xiii** All process monitors/instruments as specified in Permit Table III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., will be equipped with operational alarms to warn of deviation, or imminent deviation from the limits specified in Permit Table III.10.J.F.

**III.10.J.1.a.xiv** The Permittees will install and test all process and leak detection system monitors/instrumentation as specified in Permit Tables III.10.J.C and III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5, in accordance with Operating Unit Group 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.d.x. and III.10.J.5.f.xvi.

**III.10.J.1.a.xv** Except during periods of HLW Vitrification System start up and shut down, no dangerous and/or mixed waste will be treated in the HLW Vitrification System unless the operating conditions specified under Permit Condition III.10.J.1.c. are complied with.

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

**III.10.J.1.a.xvii** The Permittees will operate the HLW Vitrification System to prevent spills and overflows using description of controls and practices as required under WAC 173-303-640(5)(b) described in Permit Condition III.10.C.5, and Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(c)(ix)].

**III.10.J.1.a.xviii** For routinely non-accessible HLW Vitrification System sub-systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi., the Permittees will mark all routinely non-accessible HLW Vitrification System sub-systems access points with labels or signs to identify the waste contained in each HLW 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 HLW 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.J.1.a.xix** For all HLW Vitrification System sub-systems not addressed in Permit Condition III.10.J.1.a.xviii., the Permittees will mark all these HLW Vitrification System sub-systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the HLW 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 HLW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

**III.10.J.1.a.xx** The Permittees will ensure that the containment systems for the HLW Vitrification System sub-systems listed in Permit Tables III.10.J.A. and III.10.J.B, as approved/modified pursuant to Permit Condition III.10.J.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 HLW 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 10.18 of this Permit, as approved pursuant to Permit Condition 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].

**III.10.J.1.a.xxi** The Permittees must immediately, and safely, remove from service any HLW 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 Conditions III.10.J.1.a.xxiii.A. through D., and F. The affected HLW Vitrification System, or secondary containment system, must be either repaired or closed in accordance with Permit Condition III.10.J.1.a.xxiii.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.J.1.a.xxii** An impermeable coating, as specified in Operating Unit Group 10, Appendices 10.4, 10.5, 10.7, 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition III.10.J.5.b.v., will be maintained for all concrete containment systems and concrete portions of containment systems for each HLW Vitrification System sub-systems listed in Permit Tables III.10.J.A and III.10.J.B as approved/modified pursuant to Permit Condition 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 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 mixed waste into the concrete. All coatings will meet the following performance standards:

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

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

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

**III.10.J.1.a.xxiii** The Permittees will inspect all containment systems for the HLW Vitrification System sub-systems listed in Permit Tables III.10.J.A and III.10.J.B, as approved/modified pursuant to Permit Condition III.10.J.5., in accordance with the Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:

A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW Vitrification System sub-systems or secondary containment system.

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of the HLW Vitrification System sub-systems will be, as a minimum, managed as mixed waste.

D. If the cause of the release was a spill has not damaged the integrity of the HLW Vitrification System sub-system, the Permittees may return the HLW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the dangerous and/or mixed waste to enter the containment system will not re-occur [WAC 173-303-320(3)].

E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary HLW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the HLW Vitrification System Sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8., or

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.J.1.a.iii.) the HLW Vitrification System in accordance with Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e.v., before the HLW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

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

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

**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)]:

A. Reasons for delayed removal;

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

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

**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.

**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.

**III.10.J.1.a.xxvii** Modifications to approved design, plans, and specifications in Operating Unit Group 10 of 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.

**III.10.J.1.a.xxviii** For any portion of the HLW Vitrification System that has the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.J.1.a.xxix** For each HLW Vitrification System sub-system holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e) in accordance with WAC 173-303-680].

**III.10.J.1.b** Performance Standards

**III.10.J.1.b.i** The HLW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and 40-CFR 63.1203(c)(2), in accordance with WAC 173-303-680(2)].

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

DRE=[1-(Wout/Win)] x 100%

Where:

Win=mass feed rate of one principal organic dangerous constituent (PODC) in a waste feed stream; and

Wout=mass emission rate of the same PODC present in exhaust emissions prior to release to the atmosphere.

**III.10.J.1.b.ii** Particulate matter emissions from the HLW 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.J.1.b.iii** Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)]:

**III.10.J.1.b.iv** Dioxin and Furan TEQ emissions from the HLW 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.J.1.b.v** Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm, [40 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)].

**III.10.J.1.b.vi** Lead and cadmium emissions from the HLW 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.J.1.b.vii** Arsenic, beryllium, and chromium emissions from the HLW 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.J.1.b.viii** Carbon monoxide (CO) emission from the HLW Vitrification System will not exceed 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2)].

**III.10.J.1.b.ix** Hydrocarbon emission from the HLW Vitrification System will not exceed 10 parts per million (ppm) 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)]:

**III.10.J.1.b.x** If the emissions from the HLW Vitrification System exceed the emission rates listed in Permit Table III.10.J.E, as approved pursuant to Permit Condition III.10.C.11.b., the Permittees will notify Ecology, in accordance with Permit Condition III.10.J.3.d.vii. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

The emission limits specified in Permit Conditions III.10.J.1.b.i. through III.10.J.1.b.ix. above, will be met for the HLW Vitrification System by limiting feed rates as specified in Permit Tables III.10.J.D and III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., compliance with operating conditions specified in Permit Condition III.10.J.1.c. (except as specified in Permit Condition III.10.J.1.b.xii.), and compliance with Permit Condition III.10.J.1.b.xi.

**III.10.J.1.b.xi** Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste management units contained in the HLW Building, but not included in Permit Table III.10.J.A, as approved/modified pursuant to Permit Condition III.10.J.5., will be as specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

**III.10.J.1.b.xii** Except during periods of HLW Vitrification System startup and shutdown, compliance with the operating conditions specified in Permit Condition III.10.J.1.c., will be regarded as compliance with the required performance standards identified in Permit Conditions III.10.J.1.b.i. through x. However, if it is determined that during the effective period of this Permit that compliance with the operating conditions in Permit Condition III.10.J.1.c. is not sufficient to ensure compliance with the performance standards specified in Permit Conditions III.10.J.1.b.i. through x., the Permit may be modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

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

The Permittees will operate the HLW Vitrification System in accordance with Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi., and Operating Unit Group 10, Appendix 10.18 of this Permit, as approved

pursuant to Permit Condition III.10.J.5.e., and Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f., except as modified pursuant to Permit Conditions III.10.J.1.b.xii., III.10.J.2., III.10.J.3., III.10.J.4., and in accordance with the following:

**III.10.J.1.c.i** The Permittees will operate the HLW Vitrification System in order to maintain the systems and process parameters listed in Permit Tables III.10.J.C and III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., within the set-points specified in Permit Table III.10.J.F.

**III.10.J.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., to automatically cut-off and/or lock-out the dangerous and mixed waste feed to the HLW Vitrification System when the monitored operating conditions deviate from the set-points specified in Permit Table III.10.J.F.

**III.10.J.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., to automatically cut-off and/or lock-out the dangerous and mixed waste feed to the HLW Vitrification System when all instruments specified on Permit Table III.10.H.F for measuring the monitored parameters fails or exceeds its span value

**III.10.J.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., to automatically cut-off and/or lock out the dangerous and/or mixed waste feed to the HLW Vitrification System when any portion of the HLW Vitrification System is bypassed. The terms “bypassed” and “bypass event” as used in Permit Sections III.10.J and III.10.K will mean if any portion of the HLW Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.

**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 approved/modified pursuant to Permit Condition III.10.J.5., the Permittees will immediately, manually cut-off the dangerous and mixed waste feed to the HLW Vitrification System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

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

**III.10.J.1.c.vii** If greater than thirty (30) dangerous and mixed waste feed cut-offs, combined, to the HLW Vitrification System occur due to deviations from Permit Table III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5., within a sixty (60) day period, the Permittees will submit a written report to Ecology within five (5) calendar days of the thirty-first exceedance including the information specified below. These dangerous and mixed waste feed cut-offs to the HLW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous waste, mixed waste, and waste residues continue to be processed in the HLW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.J.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.J.F.

B. The magnitude, dates, and duration of the deviations.

C. Results of the investigation of the cause of the deviations.

D. Corrective measures taken to minimize future occurrences of the deviations.

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

A. Investigate the cause of the bypass event.

B. Take appropriate corrective measures to minimize future bypasses.

C. Record the investigation findings and corrective measures in the operating record.

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

**III.10.J.1.c.ix** The Permittees will control fugitive emissions from the HLW Vitrification System by maintaining the melter under negative pressure.

**III.10.J.1.c.x** Except during periods of HLW Vitrification System startup and shutdown, compliance with the operating conditions specified in Permit Condition III.10.J.1.c. will be regarded as compliance with the required performance standards identified in Permit Condition III.10.J.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, will justify modification, revocation, or re-issuance of this Permit, in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

**III.10.J.1.d** Inspection Requirements [WAC 173-303-680(3)].

**III.10.J.1.d.i** The Permittees will inspect the HLW Vitrification System in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

**III.10.J.1.d.ii** The inspection data for HLW Vitrification System will be recorded, and the records will be placed in the WTP Unit operating record for the HLW Vitrification System, in accordance with Permit Condition III.10.C.4.

**III.10.J.1.d.iii** The Permittees will comply with the inspection requirements specified in 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.e** Monitoring Requirements [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(3)]

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

**III.10.J.1.e.ii** The Permittees will comply with the monitoring requirements specified in Operating Unit Group 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved 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 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.e.iii** The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance with Performance Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and 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.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables III.10.J.C and F, as approved/modified pursuant to Permit Condition III.10.J.5., in 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 automatic waste feed cut-offs 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 shutdown.

C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System shutdowns caused by malfunction of either process or control equipment.

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.

**III.10.J.2.b.ii** The shakedown period will not exceed the following limits, as defined by hours of operation, when the HLW Vitrification System is processing dangerous waste. The Permittees may petition Ecology for one (1) 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.J.2.b.iii** Shakedown Phase 2 will not be commenced until documentation has been submitted to Ecology verifying that the HLW Vitrification System has operated at a minimum of 75% of the shakedown Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour periods with no AWFCOs.

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

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

**III.10.J.2.c.ii** The Permittees will not feed the following waste to the HLW Vitrification System during Shakedown Phase 1:

A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).
B. Mixed waste

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

A. Mixed waste

**III.10.J.2.c.iv** The feed-rates to the HLW Vitrification System will not exceed the limits in Permit Tables III.10.J.D and III.10.J.F, as approved/modified pursuant to Permit Condition III.10.J.5.

**III.10.J.2.c.v** The Permittees will conduct sufficient analysis of the dangerous waste treated in the HLW Vitrification System to verify that the waste feed is within the physical and chemical composition limits specified in this Permit.

**III.10.J.3 Demonstration Test 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.3.a** Demonstration Test Period

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

**III.10.J.3.a.ii** Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f., will be re-submitted to Ecology for approval by the Permittees as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. at least one hundred and eighty (180) days prior to the start date of the demonstration test. The revised Demonstration Test Plan will include applicable EPA promulgated test methods and procedures in effect at the time of the re-submittal and projected commencement and completion dates for the Demonstration Test.

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

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

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

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

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

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

**III.10.J.3.c.iv.** The dangerous waste feed-rates to the HLW Vitrification System will not exceed the limits in Permit Tables III.10.J.D and F, as approved/modified pursuant to Permit Condition III.10.J.5.

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

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

**III.10.J.3.d.i** The Permittees will submit to Ecology a complete demonstration test report within one hundred and eighty (180) calendar days of completion of the Demonstration Test

including all data collected during the Demonstration Test and updated Permit Tables III.10.K.D, III.10.K.E, and III.10.K.F.

**III.10.J.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 HLW Vitrification System:

A. The Permittees will submit a summary of data collected as required during the Demonstration Test to Ecology upon completion of the Demonstration Test.

B. A certification that the Demonstration Test has been carried out in accordance with the approved Demonstration Test Plan and approved modifications within thirty (30) days of the completion of the Demonstration Test [WAC 173-303-807(8)].

C. Calculations and analytical data showing compliance with the performance standards 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 III.10.J.1.b.vii

D. Laboratory data QA/QC summary for the information provided in III.10.J.3.d.ii.C.

**III.10.J.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 HLW Vitrification System for the post-demonstration test period indicated in Permit Tables III.10.J.D and F, as approved/modified pursuant to Permit Condition III.10.J.5., in 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.

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

**III.10.J.3.d.v** After successful completion of the Demonstration Test, Permittees submittal of the following to Ecology, and Permittees receipt of Ecology approval of the following in 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.

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

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

**III.10.J.3.d.vi** If any calculations or testing results show that one or more of the performance standards listed in Permit Condition III.10.J.1.b., with the exception of Permit Condition III.10.J.1.b.x., for the HLW Vitrification System were not met during the Demonstration Test, the Permittees will perform the following actions:

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

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

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

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

E. Based on the information provided to Ecology by the Permittees, pursuant to Permit Conditions III.10.J.3.d.vi.A through D above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of a compliance schedule and/or revised Demonstration Test Plan, pursuant to Permit Conditions III.10.J.3.d.vi.F and G.

F. If the performance standard listed in Permit Condition III.10.J.1.b.i. was not met during the Demonstration Test, the Permittees will submit within one hundred and twenty (120) days of discovery of not meeting the performance standard, a revised Demonstration Test Plan (if appropriate) and a compliance schedule for Ecology approval to address this deficiency. If a revised Demonstration Test Plan is submitted, it will be accompanied by a request for approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The revised Demonstration Test Plan (if submitted) must include substantive changes to prevent failure from reoccurring.

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

**III.10.J.3.d.vii** If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.J.E, as approved pursuant to Permit Condition III.10.C.11.b., is exceeded for HLW Vitrification System during the Demonstration Test, the Permittees will perform the following actions:

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 exceedance 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).

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 HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or

III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

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

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

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

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

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

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

**III.10.J.5 Compliance Schedules**

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

**III.10.J.5.b** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to construction of each secondary containment and leak detection system for the HLW Vitrification System (per level) as identified in Permit Tables III.10.J.A and III.10.J.B, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 10.2, 10.4, 10.5, 10.7, 10.8, 10.9, 10.11, and 10.12 of this Permit. At a minimum, engineering information specified below will show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

**III.10.J.5.b.i** IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will include review of design drawings, calculations, and other information on which the certification report is based and will include, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 10.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. IQRPE Reports will be consistent with the information separately provided in ii. through ix.

below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i )];

**III.10.J.5.b.ii** Design drawings (General Arrangement Drawings, plan) and specifications for the foundation, secondary containment including liner installation details, and leak detection methodology. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

**III.10.J.5.b.iii** The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.b.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.J.5.b.v** Secondary containment/foundation, and leak detection system, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials), as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.J.5.b.vi** Detailed description of how the secondary containment for the HLW Vitrification System will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B);

**III.10.J.5.b.vii** Submit Permit Tables III.10.J.B and III.10.K.B completed to provide for all secondary containment sumps and floor drains the information, as specified in each column heading consistent with information to be provided in i. through vi., above;

**III.10.J.5.b.viii** Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.b.ix** A detailed description of how HLW Vitrification System design provides access for conducting future HLW Vitrification System integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-806(4)(i)(i)(B)].

**III.10.J.5.c** The Permittees will submit to Ecology pursuant to Permit Condition III.10.C.9.f., prior to installation of each sub-system as identified in Permit Table III.10.J.A, engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 10.1 through 10.14 and 10.17 of this Permit. At a minimum, engineering information specified below will show the following, as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.J.5.c.i** IQRPE Reports (specific to sub-system) will include review of design drawings, calculations, and other information on which the certification report is based and will

include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 10.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will be consistent with the information separately provided in ii. through xii. below and the IQRPE Report specified in Permit Condition III.10.J.5.b. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.J.5.c.ii** Design drawings [General Arrangement Drawings in plan, Process Flow Diagrams, Piping and Instrumentation Diagrams, (including pressure control systems), Mechanical Drawings, and specifications, and other information specific to subsystems (to show location and physical attributes of each subsystem specific to miscellaneous units)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

**III.10.J.5.c.iii** Sub-system design criteria (references to codes and, standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details to support the sub-systems. Structural support calculations specific to off-specification, non-standard, and field-fabricated subsystems will be submitted for incorporation into the Administrative Record. Documentation will include, but not be limited to, supporting specifications (test data, treatment effectiveness report, etc.), supporting projected operational capability (e.g., WESP projected removal efficiency for individual metals, halogens, particulates, etc.), and compliance with performance standards specified in Permit Condition III.10.J.1.b [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.c.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.J.5.c.v** Sub-system materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.J.5.c.vi** Sub-system vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.c.vii** System descriptions related to sub-system units will be submitted for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.c.viii** Mass and energy balance for normal projected operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.c.ix** Detailed description of all potential HLW Vitrification System bypass events including:

A. A report which includes an analysis of credible potential bypass events and recommendations for prevention/minimization of the potential, impact, and frequency of the bypass event to include at a minimum:

1. Operating procedures
2. Maintenance procedures
3. Redundant equipment
4. Redundant instrumentation
5. Alternate equipment
6. Alternate materials of construction

**III.10.J.5.c.x** A detailed description of how the sub-systems will be installed in compliance with WAC 173-303-640(3)(b), (c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

**III.10.J.5.c.xi** Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680, (2), and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.c.xii** Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.d** The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of equipment for each sub-system as identified in Permit Tables III.10.J.A and III.10.J.B, not addressed in Permit Conditions III.10.J.5.b. or III.10.J.5.c., engineering information as specified below, for incorporation into Operating Unit Group 10, Appendices 10.1 through 10.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

**III.10.J.5.d.i** IQRPE Reports (specific to sub-system equipment) will include a review of design drawings, calculations, and other information as applicable on which the certification report is based. The reports will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit Group 10, Appendix 10.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports will be consistent with the information provided separately in ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.J.5.b. and III.10.J.5.c. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(I)(I)(A) through (B)];

**III.10.J.5.d.ii** Design drawings [Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure control systems), and specifications, and other information specific to equipment (these drawings should include all equipment such as pipes, valves, fittings,

pumps, instruments, etc.)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

**III.10.J.5.d.iii** Sub-system equipment design criteria (references to codes and standards, load definitions and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the sub-system equipment. [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.d.iv** A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.J.5.d.v** Materials selection documentation for equipment for each sub-system (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

**III.10.J.5.d.vi** Vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, for sub-system equipment will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];

**III.10.J.5.d.vii** Sub-system, sub-system equipment, and leak detection system instrument control logic narrative description (e.g., descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.d.viii** System description related to sub-system equipment, and system descriptions related to leak detection systems, for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.d.ix** A detailed description of how the sub-system equipment will be installed and tested [WAC 173-303-640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.d.x** For process monitoring, control, and leak detection system instrumentation for the HLW Vitrification System as identified in Permit Tables III.10.J.C. and III.10.J. F., a detailed description of how the process monitoring, control, and leak detection system instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];

**III.10.J.5.d.xi** Mass and energy balance for projected normal operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, 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 [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

**III.10.J.5.d.xii** Documentation that sub-systems equipment are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)] [WAC 173-303-815(2)(b)(ii)];

**III.10.J.5.d.xiii** Leak Detection system documentation (e.g. vendor information etc.) consistent with information submitted under Permit Condition III.10.J.5.c.ii. and Permit Conditions III.10.J.5.d.ii., vii., viii., and x. above, will be submitted for incorporation into the Administrative Record.

**III.10.J.5.e** Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit Group 10, Appendix 10.18 of this Permit, except Permit Condition III.10.J.5.e.i., which will be incorporated into Operating Unit Group 10, Addendum E of this Permit. All information provided under this permit condition must be consistent with information provided 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 approved by Ecology:

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

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

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

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

**III.10.J.5.e.v** Description of procedures for investigation and repair of the HLW Vitrification System [WAC 173-303–640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(ia)(iv), and WAC 173-303-806(4)(a)(ii)(B)];

**III.10.J.5.e.vi** Updated Addendum C, Narrative Description, Tables and Figures as identified in Permit Tables III.10.J.A and III.10.J.B, as modified pursuant to Permit Condition III.10.H.5.e.x. and updated to identify routinely non-accessible LAW Vitrification sub-systems.

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

**III.10.J.5.e.viii** A description of the tracking system used to track dangerous and/or mixed waste generated throughout the HLW Vitrification System, pursuant to WAC 173-303-380.

**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 Vitrification System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems, as specified in Operating Unit Group 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b.and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii., will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

**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 173-303-806(4)(i)(i)(A) through (B)]:

A. Under column 1, update and complete list of dangerous and mixed waste HLW Vitrification System sub-systems, including plant items that comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the 'Reserved' with Operating Unit Group 10, Appendix 10.0 sub-sections (e.g., 10.1, 10.2, etc.) designated in Permit Conditions III.10.J.5.b., c., and d. specific to HLW Vitrification System sub-system, as listed in column 1.

D. Under column 4, update and complete list of narrative description, tables, and figures.

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

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

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

**III.10.J.5.f.i** Analysis of each feed-stream to be fed during the demonstration test, including dangerous waste, glass formers and reductants, process streams (e.g., control air, process air, steam, sparge bubbler air, air in-leakage from melter cave, and gases from HLW Vitrification Vessel Ventilation System, process water, etc.) that includes:

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

B. Description of the physical form of the feed-streams;

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

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

**III.10.J.5.f.ii** Specification of trial principal organic dangerous constituents (PODCs) for which destruction and removal efficiencies are proposed to be calculated during the demonstration test and for inclusion in Permit Conditions III.10.J.1.b.i. and III.10.K.1.b.i. These trial PODCs will be specified based on destructibility, concentration or mass in the waste and the dangerous waste constituents or constituents in WAC 173-303-9905;

**III.10.J.5.f.iii** A description of the blending procedures, prior to introducing the feed-streams into the melter, including analysis of the materials prior to blending, and blending ratios;

**III.10.J.5.f.iv** A description of how the surrogate feeds are to be introduced for the demonstration. This description should clearly identify the differences and justify how any of differences would impact the surrogate feed introduction as representative of how mixed waste feeds will be introduced;

**III.10.J.5.f.v** A detailed engineering description of the HLW Vitrification System, including:

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

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

C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections) and General Arrangement Drawings.

D. Process Engineering Descriptions.

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

F. Engineering Specifications/data sheets (materials of construction, physical and chemical tolerances of equipment, equipment performance warranties, and fan curves).

G. Detailed Description of Automatic Waste Feed Cut-off System addressing critical operating parameters for all performance standards specified in Permit Condition III.10.J.1.b.

H. Documentation to support compliance with performance standards specified in Permit Condition III.10.J.1.b., including engineering calculations, test data, and manufacturer/vendor's warranties, etc.

I. Detailed description of the design, operation and maintenance practices for air pollution control system.

J. Detailed description of the design, operation, and maintenance practices of any stack gas monitoring and pollution control monitoring system.

**III.10.J.5.f.vi** Detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis including, but not limited to:

A. A short summary narrative description of each stack sample method should be included within the main body of the demonstration test plan, which references an appendix to the plan that would include for each sampling train: (1) detailed sample method procedures, (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4) detailed analytical method procedures, and (5) sampling preparation and analysis flow sheet. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, enhancements to train to accommodate high moisture content in stack gas, etc.) and what is being proposed along with the basis for the decision.

B. A short summary narrative description of the feed and residue sampling methods should be included within the main body of the demonstration test plan, which references an appendix that would include for each sample type: (1) detailed sample method procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical method procedures. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, etc.) and what is being proposed along with the basis for the decision.

**III.10.J.5.f.vii** A detailed test schedule for each condition for which the demonstration test is planned, including projected date(s), duration, quantity of dangerous waste to be fed, and other relevant factors;

**III.10.J.5.f.viii** A detailed test protocol including, for each test condition, the ranges of feed-rate for each feed system, and all other relevant parameters that may affect the ability of the HLW

Vitrification System to meet performance standards specified in Permit Condition III.10.J.1.b.;

**III.10.J.5.f.ix** A detailed description of planned operating conditions for each demonstration test condition, including operating conditions for shakedown, demonstration test, post-demonstration test and normal operations. This information will also include submittal of Permit Tables III.10.J.D, III.10.J.F, III.10.K.D, and III.10.K.F completed with the information as specified in each column heading for each HLW Vitrification System waste feed cut-off parameter and submittal of supporting documentation for Permit Tables III.10.J.D, III.10.J.F, III.10.K.D, and III.10.K.F set-point values.

**III.10.J.5.f.x** The test conditions proposed must demonstrate meeting the performance standards specified in Permit Condition III.10.J.1.b. with the simultaneous operation of the melter at capacity and input from the HLW Vitrification Vessel Ventilation System at capacity to simulate maximum loading to the HLW Vitrification System off-gas treatment system and to establish the corresponding operating parameter ranges.

**III.10.J.5.f.xi** A detailed description of procedures for start-up and shutdown of waste feed and controlling emissions in the event of an equipment malfunction, including off-normal and emergency shutdown procedures;

**III.10.J.5.f.xii** A calculation of waste residence time;

**III.10.J.5.f.xiii** . Any request to extrapolate metal feed-rate limits from Demonstration Test levels must include:

A. A description of the extrapolation methodology and rationale for how the approach ensures compliance with the performance standards, as specified in Permit Condition III.10.J.1.b.

B. Documentation of the historical range of normal metal feed-rates for each feed stream.

C. Documentation that the level of spiking recommended during the demonstration test will mask sampling and analysis imprecision and inaccuracy to the extent that extrapolation of feed-rates and emission rates from the Demonstration Test data will be as accurate and precise as if full spiking were used.

**III.10.J.5.f.xiv** Documentation of the expected levels of constituents in HLW Vitrification System input streams, including, but not limited to, waste feed, glass former and reactants, control air, process air, steam, sparge bubbler air, air in-leakage from melter cave, gases from HLW Vitrification Vessel Ventilation System, and process water.

**III.10.J.5.f.xv** Documentation justifying the duration of the conditioning required to ensure the HLW Vitrification System had achieved steady-state operations under Demonstration Test operating conditions.

**III.10.J.5.f.xvi** Documentation of HLW Vitrification System process and leak detection system instruments 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 include:

A. Procurement specifications

B. Location used

C. Range, precision, and accuracy

D. Calibration/functionality test procedures (either method number ASTM) or provide a copy of manufacturer's recommended calibration procedures

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.).

F. Equipment instrument control logic narrative description (e.g., descriptions of failsafe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)]

**III.10.J.5.f.xvii** Outline of demonstration test report.

**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 |
|---|---|---|---|
| **HLW Melter Process System**<br><br>HMP-MLTR-00001 (HLW Melter 1)<br><br>HMP-MLTR-00002 (HLW Melter 2) | HMP | -M6-HMP-00001001, Rev 0<br>-M6-HMP-00001002, Rev 1<br>-M6-HMP-00003001, Rev 0<br>-M6-HMP-00004001, Rev 1<br>-M6-HMP-00006001, Rev 1<br>-M6-HMP-00006002, Rev 0<br>-M6-HMP-00007001, Rev 0<br>-M6-HMP-00008001, Rev 0<br>-M6-HMP-00013002, Rev 1<br>-M6-HMP-00013003, Rev 0<br>-M6-HMP-20001001, Rev 0<br>-M6-HMP-20001002, Rev 0<br>-M6-HMP-20003001, Rev 0<br>-M6-HMP-20004001, Rev 0<br>-M6-HMP-20006001, Rev 0<br>-M6-HMP-20008001, Rev 0<br>-M6-HMP-20013002, Rev 0<br>-M6-HMP-20013003, Rev 0<br>-M5-V17T-P0002, Rev 1<br>-M5-V17T-P20002, Rev 1<br>-M0D-HMP-00001, Rev 2<br>-M0D-HMP-00002, Rev 2<br>-MF-HMP-00001, Rev 0<br>-MF-HMP-00002, Rev 0<br>-MF-HMP-00003, Rev 0<br>-N1D-HMP-P0001, Rev 0<br>-P1-P01T-00002, Rev 7<br>-3PS-AE00-T0001, Rev 5 | 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. |
| **Melter Offgas Treatment Process System**<br><br>HOP-FCLR-00001 (Melter 1 Offgas Film Cooler)<br><br>HOP-FCLR-00002 (Melter 2 Offgas Film Cooler) | HOP | **24590-HLW**<br>-M5-V17T-P0002, Rev1<br>-M5-V17T-P20002, Rev 1<br>-M6-HMP-00002001, Rev 0<br>-M6-HMP-00002002, Rev 0<br>-M6-HMP-20002001, Rev 0<br>-M6-HMP-20002001, Rev 0 | 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. |

**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-FCLR-00003 (Melter 1 Standby Offgas Insert)<br><br>HOP-FCLR-00004 (Melter 2 Standby Offgas Insert) | | -3YD-HOP-00001[a] | |
| **<u>Melter Offgas Treatment Process System (Cont.)</u>**<br><br>HOP-SCB-00001 (Melter 1 Submerged Bed Scrubber, SBS)<br><br>HOP-SCB-00002 (Melter 2 Submerged Bed Scrubber, SBS) | HOP | **<u>24590-HLW</u>**<br>-M5-V17T-P0003, Rev 1<br>-M5-V17T-P20003, Rev 1<br>-M6-HOP-00001001, Rev 0<br>-M6-HOP-00001002, Rev 0<br>-M6-HOP-00001003, Rev 0<br>-M6-HOP-20001001, Rev 0<br>-M6-HOP-20001002, Rev 0<br>-M6-HOP-20001003, Rev 0<br>-MKD-HOP-P0016, Rev 0<br>-MK-HOP-P0001001, Rev 0<br>-MK-HOP-P0001002, Rev 0<br>-MK-HOP-P0001003, Rev 0<br>-MK-HOP-P0001004, Rev 0<br>-N1D-HOP-P0010, Rev 0<br>-P1-P01T-00002, Rev 7<br>-3YD-HOP-00001[a]<br>**<u>24590-WTP</u>**<br>-3PS-MV00-T0001, Rev 5<br>-3PS-MV00-T0002, Rev 3<br>-3PS-MV00-T0003, 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>**<br><br>HOP-WESP-00001 (Melter 1 Wet Electrostatic Precipitator, WESP)<br><br>HOP-WESP-00002 (Melter 2 Wet Electrostatic Precipitator, WESP) | HOP | **<u>24590-HLW</u>**<br>-M5-V17T-P0003, Rev 1<br>-M5-V17T-P20003, Rev 1<br>-M6-HOP-00002, Rev 5<br>-M6-HOP-20002, Rev 6<br>-N1D-HOP-P0002, Rev 0<br>-P1-P01T-00004, Rev 7<br>-P1-P01T-00005, Rev 6 | 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]<br>**24590-WTP**<br>-3PS-MKE0-T0001, Rev 5 | |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-HEPA-00001A (Melter 1 Primary Offgas HEPA Filter)<br><br>HOP-HEPA-00001B (Melter 1 Primary Offgas HEPA Filter)<br><br>HOP-HEPA-00002A (Melter 1 Secondary Offgas HEPA Filter)<br><br>HOP-HEPA-00002B (Melter 1 Secondary Offgas HEPA Filter)<br><br>HOP-HEPA-00007A (Melter 2 Primary Offgas HEPA Filter)<br><br>HOP-HEPA-00007B (Melter 2 Primary Offgas HEPA Filter)<br><br>HOP-HEPA-00008A (Melter 2 Secondary Offgas HEPA Filter)<br><br>HOP-HEPA-00008B (Melter 2 Secondary Offgas HEPA Filter) | HOP | **24590-HLW**<br>-M5-V17T-P0003, Rev 1<br>-M5-V17T-P20003, Rev 1<br>-M6-HOP-00010, Rev 3<br>-M6-HOP-20010, Rev 4<br>-MAD-HOP-00010, Rev 5<br>-MAD-HOP-00011, Rev 5<br>-MAD-HOP-00012, Rev 5<br>-MAD-HOP-00013, Rev 5<br>-MAD-HOP-00014, Rev 5<br>-MAD-HOP-00015, Rev 5<br>-MAD-HOP-00016, Rev 5<br>-MAD-HOP-00017, Rev 5<br>-P1-P01T-00002, Rev 7<br>-3YD-HOP-00001[a]<br><br>**24590-WTP**<br>-3PS-MKH0-T0002, 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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-ADBR-00001A (Melter 1Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00003001, Rev 0<br>-M6-HOP-00003002, Rev 0<br>-M6-HOP-20003001, Rev 0<br>-M6-HOP-20003002, Rev 0<br>-MVD-HOP-00015, 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. |

**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-ADBR-00001B (Melter 1 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001)<br><br>HOP-ADBR-00002A (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00002)<br><br>HOP-ADBR-00002B (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00002) | | -MVD-HOP-00016, Rev 3<br>-N1D-HOP-00003, Rev 1<br>-P1-P01T-00002, Rev 7<br><br>**24590-WTP**<br>-3PS-MWK0-T0001, Rev 5 | |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-HEME-00001A (Melter 1 High Efficiency Mist Eliminator, HEME)<br><br>HOP-HEME-00001B (Melter 1 High Efficiency Mist Eliminator, HEME)<br><br>HOP-HEME-00002A (Melter 2 High Efficiency Mist Eliminator, HEME)<br><br>HOP-HEME-00002B (Melter 2 High Efficiency Mist Eliminator, HEME) | HOP | **24590-HLW**<br>-M5-V17T-P0003, Rev 1<br>-M5-V17T-P20003, Rev 1<br>-M6-HOP-00009001, Rev 0<br>-M6-HOP-00009002, Rev 0<br>-M6-HOP-20009001, Rev 0<br>-M6-HOP-20009002, Rev 0<br>-MVD-HOP-00007, Rev 5<br>-MV-HOP-P0002001, Rev 0<br>-MV-HOP-P0002002, Rev 0<br>-MV-HOP-P0002003, Rev 0<br>-N1D-HOP-P0001, Rev 0<br>-P1-P01T-00002, Rev 7<br>-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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-SCO-00001 (Thermal Catalytic Oxidizer – located on Catalyst SkidHOP-SKID-00005)<br><br>HOP-SCO-00004 (Thermal Catalytic Oxidizer – located on Catalyst Skid HOP-SKID-00007) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001,Rev 0<br>-M6-HOP-00008002,Rev 0<br>-M6-HOP-00008003,Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MKD-HOP-P0019, 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 |
|---|---|---|---|
| | | -MKD-HOP-P0020, Rev 0<br>-N1D-HOP-00004, Rev 5<br>-NID-HOP-00005, Rev 5<br>-P1-PO1T-00002, Rev 7<br>-3PS-MBTV-T0002, Rev 1<br>**24590-LAW**<br>-3PS-MBTV-T0001, Rev 5 | |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-SCR-00001 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SKID-00005)<br><br>HOP-SCR-00002 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SKID-00007) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MKD-HOP-P0019, Rev 0<br>-MKD-HOP-P0020, Rev 0<br>-N1D-HOP-00004, Rev 5<br>-N1D-HOP-00005, Rev 5<br>-P1-PO1T-00002, Rev 7<br>-3PS-MBTV-T0002, Rev 1<br>**24590-LAW**<br>-3PS-MBTV-T0001, Rev 5 | 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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-HX-00001 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SKID-00005)<br><br>HOP-HX-00003 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SKID-00007) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MKD-HOP-P0019, Rev 0<br>-MKD-HOP-P0020, Rev 0<br>-N1D-HOP-00008, 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. |

**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 |
|---|---|---|---|
| | | -P1-PO1T-P0002, Rev 7<br>-3PS-MBTV-T0002, Rev 1<br>**24590-LAW**<br>-3PS-MBTV-T0001, Rev 5 | |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-HTR-00001 (Catalyst Skid Electric Heater – located on Catalyst Skid HOP-SKID-00005)<br><br>HOP-HTR-00007 (Catalyst Skid Electric Heaters – located on Catalyst Skid HOP-SKID-00007) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MKD-HOP-P0019, Rev 0<br>-MKD-HOP-P0020, Rev 0<br>-P1-PO1T-00002, Rev 7<br>-3PS-MBTV-T0002, Rev 1<br>-N1D-HOP-00011, Rev 0<br>**24590-LAW**<br>-3PS-MBTV-T0001, Rev 5 | 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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-ABS-00002 (Silver Mordenite Column)<br><br>HOP-ABS-00003 (Silver Mordenite Column) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MKD-HOP-00014, Rev 5<br>-MKD-HOP-00017, Rev 7<br>-NID-HOP-P0006, Rev 1<br>-P1-P01T-00001, Rev 9<br>-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. |
| **Melter Offgas Treatment Process System (Cont.)** | HOP | **24590-HLW**<br>-M5-V17T-P0003, Rev 1 | Section 4.1.4.3; Table C-8; and |

**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-00001B (HEPA Preheater)<br><br>HOP-HTR-00002A (HEPA Preheater)<br><br>HOP-HTR-00005A (HEPA Preheater)<br><br>HOP-HTR-00005B (HEPA Preheater) | | -M5-V17T-P20003, Rev 1<br>-M6-HOP-00010, Rev 3<br>-M6-HOP-20010, Rev 4<br>-MED-HOP-00013, Rev 4<br>-3PS-MEE0-T0001, Rev 1 | Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-HX-00002 (Silver Mordenite Preheater)<br><br>HOP-HX-00004 (Silver Mordenite Preheater) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00003001, Rev 0<br>-M6-HOP-00003002, Rev 0<br>-M6-HOP-20003001, Rev 0<br>-M6-HOP-20003002, Rev 0<br>-N1D-HOP-00007, Rev 1<br>-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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-FAN-00001A (Booster Extraction Fan)<br><br>HOP-FAN-00001B (Booster Extraction Fan)<br><br>HOP-FAN-00001C (Booster Extraction Fan)<br><br>HOP-FAN-00009A (Booster Extraction Fan)<br><br>HOP-FAN-00009B (Booster Extraction Fan) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00003001, Rev 0<br>-M6-HOP-00003002, Rev 0<br>-M6-HOP-20003001, Rev 0<br>-M6-HOP-20003002, Rev 0<br>-MAD-HOP-P0018, Rev 2<br>-P1-P01T-00001, Rev 9<br><br>**24590-WTP**<br>-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-00009C (Booster Extraction Fan) | | | |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HOP-FAN-00008A (Stack Extraction Fan)<br><br>HOP-FAN-00008B (Stack Extraction Fan)<br><br>HOP-FAN-00008C (Stack Extraction Fan)<br><br>HOP-FAN-000010A (Stack Extraction Fan)<br><br>HOP-FAN-000010B (Stack Extraction Fan)<br><br>HOP-FAN-000010C (Stack Extraction Fan) | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0<br>-MAD-HOP-00038, Rev 5<br>-P1-P01T-00005, Rev 6<br><br>**24590-WTP**<br>-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. |
| **Melter Offgas Treatment Process System (Cont.)**<br><br>HLW Stack | HOP | **24590-HLW**<br>-M5-V17T-00004, Rev 5<br>-M5-V17T-20004, Rev 1<br>-M6-HOP-00008001, Rev 0<br>-M6-HOP-00008002, Rev 0<br>-M6-HOP-00008003, Rev 0<br>-M6-HOP-20008001, Rev 0<br>-M6-HOP-20008002, Rev 0<br>-M6-HOP-20008003, Rev 0 | Section 4.1.4.3; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit. |
| **Pulse Jet Ventilation System**<br><br>PJV-HTR-00002 (Pulse Jet Ventilation HEPA Electric Preheater) | PJV | **24590-HLW**<br>-M6-PJV-00001001, Rev 0<br>-M6-PJV-00002001, Rev 0 | |

**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 |
|---|---|---|---|
| PJV-HEPA-00004B (PJV System HEPA Filter (Standby Primary))<br><br>PJV-HEPA-00005B (PJV System HEPA Filter (Standby Secondary))<br><br>PJV-HEPA-00004A (PJV System HEPA Filter (Primary))<br><br>PJV-HEPA-00005A (PJV System HEPA Filter (Secondary))<br><br>PJV-FAN-00002A (Pulse Jet Vent Extraction Fan)<br><br>PJV-FAN-00002B (Pulse Jet Vent Extraction Fan) | | | |
| **Process Vessel Vent Extraction System**<br><br>PVV system contains ancillary equipment only. | PVV | **24590-HLW**<br>-M6-PVV-00001, Rev 4<br>-M6-PVV-20001, Rev 2 | |
| **Footnotes:**<br>[a]System Descriptions are maintained in the Administrative Record, and are listed here for information only. | | | |

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**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-00004001, Rev 1 | 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-00004001, Rev 1 | Melter 1 plenum temperature, 59” | TBD | (TE-0920B + TT-920A + TI-0920B)* Or | 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 |
|---|---|---|---|---|---|---|---|---|
| | | | (TE-920D + TT-0921A+ TI-0921E)* | | | | | |
| 24590-HLW-M6-HMP-20004001, Rev 0 | 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-20004001, Rev 0 | 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-00013002, Rev 1 24590-HLW-M6-HMP-00013003, Rev 0 | Melter 1 glass pool density | TBD | DT-0132 DI-0132 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-00013002, Rev 1 | Melter 1 glass pool level | TBD | LT-0131 LI-0131 | 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-00013003, Rev 0 | | | | | | | | |
| 24590-HLW-M6-HMP-20013002, Rev 0<br>24590-HLW-M6-HMP-20013003, Rev 0 | Melter 2 glass pool density | TBD | DT-2132<br>DI-2132 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-20013002, Rev 0<br>24590-HLW-M6-HMP-20013003, Rev 0 | Melter 2 glass pool level | TBD | LT-2131<br>LI-2131 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-00013002, Rev 1<br>24590-HLW-M6-HMP-00013003, Rev 0 | Melter 1 plenum pressure | TBD | (PDT-0139A + PDI-0139A)*<br>Or<br>(PDT-0139B + PDI-0139B)* | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-20013002, Rev 0<br>24590-HLW-M6-HMP-20013003, Rev 0 | Melter 2 plenum pressure | TBD | (PDT-2139A + PDI-2139A)*<br>Or | 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 |
|---|---|---|---|---|---|---|---|---|
| | | | (PDT-2139B + PDI-2139B)* | | | | | |
| 24590-HLW-M6-HMP-00008001, Rev 0<br>24590-HLW-M6-HMP-00008002, Rev 0 | Melter 1 West canister level | TBD | LT-0816 (LI-0816A Or LI-0816B)** | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-00007001, Rev 0 | Melter 1 West Discharge Air Lift | TBD | YC-0761<br>YV-0761 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-00008001, Rev 0<br>24590-HLW-M6-HMP-00008002, Rev 0 | Melter 1 East canister level | TBD | LT-0820<br>(LI-0820A Or LI-0820B)** | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-00006001, Rev 1<br>24590-HLW-M6-HMP-00006002, Rev 0 | Melter 1 East Discharge Air Lift | TBD | YC-0664<br>YV-0664 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-20008001, Rev 0 | Melter 2 West | TBD | LT-2816 | 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-20008002, Rev 0 | canister level | | (LI-2816A Or LI-2816B)** | | | | | |
| 24590-HLW-M6-HMP-20007001, Rev 0 | Melter 2 West Discharge Air Lift | TBD | YC-2761<br>YV-2761 | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-20008001, Rev 0<br>24590-HLW-M6-HMP-20008002, Rev 0 | Melter 2 East canister level | TBD | LT-2820<br>(LI-2820A Or LI-2820B)** | TBD | TBD | TBD | TBD | TBD |
| 24590-HLW-M6-HMP-20006001, Rev 0 | Melter 2 East Discharge Air Lift | TBD | YC-2664<br>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.

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**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 |

**Table III.10.J.E – HLW Vitrification System Estimated Emission Rates (RESERVED)**

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

**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.

[1]Maximum 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.J.D. of this Permit

## III.10.K HLW VITRIFICATION SYSTEM – LONG TERM MISCELLANEOUS THERMAL TREATMENT UNIT

For purposes of Permit Section III.10.K, where reference is made to WAC 173-303-640, the following substitutions apply: substitute the terms "HLW Vitrification System" for "tank system(s)," "sub-system(s)" for "tank(s)," "sub-system equipment" for "ancillary equipment," and "sub-system(s) or sub-system equipment of a HLW Vitrification System" for "component(s)," in accordance with WAC 173-303-680.

### III.10.K.1 Requirements For HLW Vitrification System Beginning Normal Operation

Prior to commencing normal operations provided in Permit Section III.10.K, all requirements in Permit Section III.10.J will have been met by the Permittees and approved by Ecology, including the following: The HLW Vitrification System Demonstration Test results and the revised Final Risk Assessment provided for in Permit Conditions III.10.C.11.c. or d. and Permit Section III.10.J, will have been evaluated and approved by Ecology, Permit Tables III.10.K.D and F, as approved/modified pursuant to Permit Condition III.10.J.5, will have been completed, submitted and approved pursuant to Permit Condition III.10.J.3.d.v. and Permit Table III.10.K.E, as approved/modified pursuant to Permit Condition III.10.J.5, will have been completed, submitted and approved pursuant to Permit Conditions III.10.C.11.c. or d.

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

**III.10.K.1.a.i** The Permittees will maintain the design and construction of the HLW Vitrification System as specified in Permit Condition III.10.K.1, Operating Unit Group 10, Addendum C of this Permit, and Operating Unit Group 10, Appendices 10.1 through 10.17 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.a. through d. and III.10.J.5.f.

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

**III.10.K.1.a.iii** Modifications to approved design, plans, and specifications in Operating Unit Group 10, of 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.

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

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

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of fine and imprisonment."

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

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

**III.10.K.1.a.vii** All process monitors/instruments as specified in Permit Table III.10.K.F, as approved/modified pursuant to Permit Condition III.10.J.5 and III.10.J.3.d.v., will be equipped with operational alarms to warn of deviation, or imminent deviation from the limits specified in Permit Table III.10.K.F.

**III.10.K.1.a.viii** The Permittees will install and test all process and leak detection system monitors/instruments, as specified in Permit Tables III.10.K.C and III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v., in accordance with Operating Unit Group 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.d.x. and III.10.J.5.f.xvi.

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

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

**III.10.K.1.a.xi** The Permittees will operate the HLW Vitrification System to prevent spills and overflows using the description of controls and practices as required under WAC 173-303-640(5)(b), described in Permit Condition III.10.C.5, and Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3), WAC-173-303-806(4)(c)(ix)].

**III.10.K.1.a.xii** For routinely non-accessible HLW Vitrification System sub-systems, as specified in Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi., the Permittees will mark all routinely non-accessible HLW Vitrification System sub-systems access points with labels or signs to identify the waste contained in each HLW 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 HLW 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.K.1.a.xiii** For all the HLW Vitrification System sub-systems not addressed in Permit Condition III.10.K.1.a.xii., the Permittees will mark all these HLW Vitrification System sub-systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the HLW 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 HLW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

**III.10.K.1.a.xiv** The Permittees will ensure that the secondary containment systems for the HLW Vitrification System sub-systems listed in Permit Tables III.10.K.A and III.10.K.B, as approved/modified pursuant to Permit Condition III.10.J.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 the use of the HLW 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 10.18 of this Permit, as approved pursuant to Permit Condition 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].

**III.10.K.1.a.xv** The Permittees must immediately and safely remove from service any HLW 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.K.1.a.xvii.A through D, and F. The affected HLW Vitrification System or secondary containment system must be either repaired or closed in accordance with Permit Condition 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)].

**III.10.K.1.a.xvi** An impermeable coating, as specified in Operating Unit Group 10, Appendices 10.4, 10.5, 10.7, 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition III.10.J.5.b.v., will be maintained for all concrete containment systems and concrete portions of containment systems for the HLW Vitrification System sub-systems listed in Permit Tables III.10. K.A and III.10.K.B, as approved/modified pursuant to Permit Condition 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 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:

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

B. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or

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

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

**III.10.K.1.a.xvii** The Permittees will inspect all secondary containment systems for the HLW Vitrification System sub-systems listed in Permit Tables III.10.K.A and III.10.K.B, as approved/modified pursuant to Permit Condition III.10.J.5., in accordance with the Inspection Schedule specified in Operating Unit Group 10, Addendum E1 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c), 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)]:

A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW Vitrification System sub-systems or secondary containment system.

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of the HLW Vitrification System will be, at a minimum, managed as mixed waste.

D. If the cause of the release was a spill that has not damaged the integrity of the HLW Vitrification System sub-system, the Permittees may return the HLW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur.

E. If the source of the dangerous and/or mixed waste is determined to be a leak in from the primary HLW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the HLW Vitrification System sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680, and Operating Unit Group 10, Addendum H of this Permit, as approved pursuant to Permit Condition III.10.C.8.

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.K.1.a.iii.) the HLW Vitrification System, in accordance with Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e.v., before the HLW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

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

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

**III.10.K.1.a.xviii** 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)]:

A. Reasons for delayed removal.

B. Measures implemented to ensure continued protection of human health and the environment.

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

**III.10.K.1.a.xix** 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.

**III.10.K.1.a.xx** In all future narrative permit submittals, the Permittees will include HLW Vitrification sub-system names with the sub-system designation.

**III.10.K.1.a.xxi** For any portion of the HLW Vitrification System which has the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

**III.10.K.1.a.xxii** For each HLW Vitrification System sub-system holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

**III.10.K.1.b** Performance Standards

**III.10.K.1.b.i** The HLW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and 40CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

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DRE in this Permit Condition will be calculated in accordance with the formula given below:

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

Where:

$W_{in}$=mass feed-rate of one principal organic dangerous constituent (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.K.1.b.ii** Particulate matter emissions from the HLW 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.K.1.b.iii** Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)];

**III.10.K.1.b.iv** Dioxin and Furan TEQ emissions from the HLW 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.K.1.b.v** Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm [40 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)];

**III.10.K.1.b.vi** Lead and cadmium emissions from the HLW 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.K.1.b.vii** Arsenic, beryllium, and chromium emissions from the HLW 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.K.1.b.viii** Carbon monoxide (CO) emission from the HLW Vitrification System will not exceed 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2) and (3)];

**III.10.K.1.b.ix** Hydrocarbon emission from the HLW Vitrification System will not exceed 10 parts per million (ppm) 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.K.1.b.x** If the emissions from the HLW Vitrification System exceed the emission rates listed in Permit Table III.10.K.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 off-set 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 exceedance 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).

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 HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

The emission limits specified in Permit Conditions III.10.K.1.b.i. through III.10.K.1.b.ix. above, will be met for the HLW Vitrification System by limiting feed rates as specified in Permit Tables III.10.K.D and III.10.K.F, as approved/modified pursuant to Permit Condition III.10.J.5 and III.10.J.3.d.v., compliance with operating conditions specified in Permit Condition III.10.K.1.c. (except as specified in Permit Condition III.10.K.1.b.xii.), and compliance with Permit Condition III.10.K.1.b.xi.

**III.10.K.1.b.xi** Treatment effectiveness, feed-rates, and operating rates for dangerous and/or mixed waste management units contained in the HLW Building, but not included in Permit Table III.10.K.A, as approved/modified pursuant to Permit Condition III.10.J.5, will be as specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with the assumptions and basis which are reflected in Operating Unit Group 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit Group 10, Appendix 6.3.1 will be superseded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

**III.10.K.1.b.xii** Compliance with the operating conditions specified in Permit Condition III.10.K.1.c., will be regarded as compliance with the required performance standards identified in Permit Conditions III.10.K.1.b.i. through x. However, if it is determined that during the effective period of this Permit that compliance with the operating conditions in Permit Condition III.10.K.1.c. is not sufficient to ensure compliance with the performance standards specified in Permit Conditions III.10.K.1.b.i. through x., the Permit may be modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g.

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

The Permittees will operate the HLW Vitrification System in accordance with Operating Unit Group 10, Addendum C of this Permit, as updated pursuant to Permit Condition III.10.J.5.e.vi., Operating Unit Group 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.e. and f., and Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f., except as modified pursuant to Permit Conditions III.10.J.3, III.10.K.1.b.x., III.10.K.1.b.xii., III.10.K.1.h., and in accordance with and the following:

**III.10.K.1.c.i** The Permittees will operate the HLW Vitrification System in order to maintain the systems and process parameters listed in Permit Tables III.10.K.C and III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within the set-points specified in Permit Table III.10.K.F.

**III.10.K.1.c.ii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to HLW Vitrification System when the monitored operating conditions deviate from the set-points specified in Permit Table III.10.K.F.

**III.10.K.1.c.iii** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to HLW Vitrification System when all instruments specified on Permit Table III.10.I.F for measuring the monitored parameters fails or exceeds its span value.

**III.10.K.1.c.iv** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to automatically cut-off and/or lock out the dangerous and/or mixed waste feed to the HLW Vitrification System when any portion of the HLW Vitrification System is bypassed. The terms "bypassed" and "bypass event" as used in Permit Sections III.10.J and K will mean if any portion of the HLW Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.

**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 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., the Permittees will immediately, manually, cut-off the dangerous and/or mixed waste feed to the HLW Vitrification System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

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

**III.10.K.1.c.vii** If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the HLW Vitrification System occur due to deviations from Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within a sixty (60) day period, the Permittees will submit a written report to Ecology within five (5) calendar days of the thirty-first (31) exceedance including the information specified below. These dangerous and/or mixed waste feed cut-offs to the HLW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the HLW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.K.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.K.F;
B. The magnitude, dates, and duration of the deviations;
C. Results of the investigation of the cause of the deviations; and
D. Corrective measures taken to minimize future occurrences of the deviations.

**III.10.K.1.c.viii** If greater than thirty (30) dangerous and/or mixed waste feed cut-offs, combined, to the HLW Vitrification System occur due to deviations from Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within a thirty (30) day period, the Permittees will submit the written report required to be submitted pursuant to Permit Condition III.10.K.1.c.vii. to Ecology, on the first business day following the thirty-first exceedance. These dangerous and/or mixed waste feed cut-offs to the HLW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the HLW Vitrification System.
A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.K.F, from which the set-point is deviated:

In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume dangerous and/or mixed waste feed to the HLW Vitrification System until this written report has been submitted; and

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

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

1. The Permittees written report does not document that the corrective measures taken will minimize future exceedances.

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

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

A. Investigate the cause of the bypass event.

B. Take appropriate corrective measures to minimize future bypasses.

C. Record the investigation findings and corrective measures in the operating record.

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

**III.10.K.1.c.x** The Permittees will control fugitive emissions from the HLW Vitrification System by maintaining the melter under negative pressure.

**III.10.K.1.c.xi** Compliance with the operating conditions specified in Permit Condition III.10.K.1.c. will be regarded as compliance with the required performance standards identified in Permit Condition III.10.K.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, will justify 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.

**III.10.K.1.d** Inspection Requirements [WAC 173-303-680(3)]

**III.10.K.1.d.i** The Permittees will inspect the HLW Vitrification System in accordance with the Inspection Schedules in Operating Unit Group 10, Addendum E1 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

**III.10.K.1.d.ii** The inspection data for HLW Vitrification System will be recorded, and the records will be placed in the WTP Unit operating record for HLW Vitrification System, in accordance with Permit Condition III.10.C.4.

**III.10.K.1.d.iii** The Permittees will comply with the inspection requirements specified in 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.3, III.10.K.1.b.x., III.10.K.1.b.xii., and III.10.K.1.h.

**III.10.K.1.e** Monitoring Requirements [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(3)]

**III.10.K.1.e.i** Upon receipt of a written request from Ecology, the Permittees will perform sampling and analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the

operating requirements established in the permit achieve the performance standards delineated in this Permit.

**III.10.K.1.e.ii** The Permittees will comply with the monitoring requirements specified in the Operating Unit Group 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5, and as modified by Permit Conditions III.10.J.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.

**III.10.K.1.e.iii** The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance with Performance Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and 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 ConditionsIII.10.J.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.

**III.10.K.1.e.iv** The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables III.10.K.C and F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., in 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.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.

**III.10.K.1.e.v** The Permittees shall calibrate, inspect, and maintain or replace the following cooling water flow and temperature instruments: (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336, TE/TT/TI-2352) in accordance with manufacturer's recommendations.

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

**III.10.K.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 5 as modified by Permit Conditions III.10.J.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.

**III.10.K.1.f.ii** The Permittees will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cut-offs 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.K.1.f.iii** The Permittees will submit to Ecology an annual report each calendar year within ninety (90) days following the end of the year. The report will include the following information:

A. Total dangerous and/or 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.

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.K.F, as approved/modified pursuant to Permit Conditions III.10.J.5 and III.10J.3.d.v.

**III.10.K.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.K.1.e.iii.

**III.10.K.1.f.v** The Permittees shall maintain operating and calibration/maintenance records for Ecology's inspection for the following cooling water flow and temperature instruments (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336, TE/TT/TI-2352).

**III.10.K.1.f.vi** The Permittees shall maintain refractory thermocouple temperature data for Ecology inspection.

**III.10.K.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.K.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)].

**III.10.K.1.h.i** Dioxin and Furan Emission Testing

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

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified on Permit Table III.10.K.F (as approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v), that were established to maintain compliance with Permit Condition III.10.K.1.b.iv., as specified in Operating Unit Group 10, Appendix 10.15 of this Permit (as approved pursuant to Permit Condition III.10.J.3.d. and in accordance with III.10.K.1.b.xii. and III.10.K.1.c.xi.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste.

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.D (as approved/modified pursuant

to Permit Conditions III.10.J.5 and III.10.J.3.d.v). Feed-rate of organics as measured by TOC are held within the range of the average value over the previous twelve (12) months. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include data obtained when not processing dangerous and/or mixed waste.

For purposes of this permit Condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.J.5.f.

B. Within sixty (60) days of Ecology's approval of the DFETP, or within thirty-one (31) months of commencing operation pursuant to Permit Section III.10.K, whichever is later, the Permittees will implement the DFETP approved, pursuant to Permit Condition III.10.K.1.h.i.A.

C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition III.10.K.1.h.i.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for dioxin and furan emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. at twenty-four (24) months from the implementation date of the testing required pursuant to Permit Condition III.10.K.1.h.i.A and at reoccurring eighteen (18) month intervals from the implementation date of the previously approved DFETP. The Permittees will implement these newly approved revised DFETPs every thirty-one (31) months from the previous approved DFETP implementation date or within sixty (60) days of the newly Ecology approved revised DFETP, whichever is later, for the duration of this Permit.

D. The Permittees will submit a summary of operating data collected pursuant to the DFETPs in accordance with Permit Conditions III.10.K.1.h.i.A and C to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports will be certified as specified in WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.K.1.h.i.A and C show that one or more of the performance standards listed in Permit Condition III.10.K.1.b., with the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification System were not met during the emission test, the Permittees will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s).
2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s) as specified in Permit Condition I.E.21.
3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s).
4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.K.1.b., with

the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification System were met during the demonstration test, if any such mode was demonstrated.

5. Based on the information provided to Ecology by the Permittees, pursuant to Permit Conditions III.10.K.1.h.i.E.1 through 4 above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10. K.1.h.i.E.6.

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan 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 F.

F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.K.1.h.i.A and C show that any emission rate for any constituent listed in Permit Table III.10.K.E, as approved/modified pursuant to Permit Conditions III.10.C.11.c. or d., is exceeded for HLW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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;

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s); and

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 revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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 F.

**III.10.K.1.h.ii** Non-organic Emission Testing

A. Within forty-eight (48) months of commencing operation pursuant to Permit Section III.10.K, the Permittees will resubmit to Ecology for approval the "Previously Approved Demonstration Test Plan" revised as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan (RDTP) will include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, projected commencement and completion dates for emission testing to demonstrate performance standards specified in Permit

Conditions III.10.K.1.b.ii., iii., v., vi., and vii., and non-organic emissions as specified in Permit Table III.10.K.E, as approved/modified pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d., under "Normal Operating Conditions." "Normal Operating Conditions" will be defined for the purposes of this permit condition as follows:

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.K.F, as approved/modified pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.K.1.b.ii., iii., v., vi., and vii., and non-organic emissions, as specified in Permit Table III.10.K.E, as specified in Operating Unit Group 10, Appendix 10.15 of this Permit (as approved pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste; and
2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.D, as approved/modified pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d. The average value is defined as the sum of all rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include data obtained when not processing dangerous and/or mixed waste.

For purposes of this permit Condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.J.5.f.

B. Within sixty (60) days of Ecology's approval of the RDTP, or within sixty (60) months of commencing operation pursuant to Permit Section III.10.K, whichever is later, the Permittees will implement the RDTP approved pursuant to Permit Condition III.10.K.1.h.ii.A.

C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition III.10.K.1.h.ii.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. at forty-eight (48) months from the implementation date of the testing required pursuant to Permit Condition III.10.K.1.h.ii.A and at reoccurring forty-eight (48) month intervals from the implementation date of the previously approved RDTP. The Permittees will implement these newly approved revised RDTP, every sixty (60) months from the previous approved RDTP implementation date or within sixty (60) days of the newly Ecology approved revised RDTP, whichever is later, for the duration of this Permit.

D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Conditions III.10.K.1.h.ii.A and C to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test

reports will be certified pursuant to WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.K.1.h.ii.A and C show that any emission rate for any constituent listed in Permit Table III.10.K.E, as approved/modified pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d., is exceeded for HLW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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.
2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s).
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 revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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 III.10.K.F.

F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.K.1.h.ii.A and C show that one or more of the performance standards listed in Permit Condition III.10.K.1.b., with the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification System were not met during the emission test, the Permittees will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s).
2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified in Permit Condition I.E.21.
3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s).
4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.K.1.b., with the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification System were met during the demonstration test, if any such mode was demonstrated.
5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.K.1.h.ii.F.1 through 4 above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10.K.1.h.ii.F.6.

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan 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 F.

**III.10.K.1.h.iii** Other Emission Testing

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

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified on Permit Table III.10.K.F, as approved/modified pursuant to Permit Condition III.10.J.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.K.1.b.viii. and ix., and emissions as specified on Permit Table III.10.K.E, not addressed under Permit Conditions III.10.K.1.h.i. or ii. as specified in Operating Unit Group 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.3.d., and in accordance with Permit Conditions III.10.K.1.b.xii. and III.10.K.1.c.xi. are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.F. The average value is defined as the sum of all rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste; and

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.K.D, as approved/modified pursuant to Permit Conditions III.10.J.3.d. and III.10.C.11.c. or d. Feed-rate of organics as measured by TOC are held within the range of the average value over the previous twelve (12) months. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time.

The average value will not include data obtained when not processing dangerous and/or mixed waste.

For purposes of this permit Condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.J.5.f.

B. Within sixty (60) days of Ecology's approval of the RDTP, or within ninety-one (91) months of commencing operation pursuant to Permit Section III.10.K, whichever is later, the Permittees will implement the RDTP approved pursuant to Permit Condition III.10.K.1.h.iii.A.

C. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Condition III.10.K.1.h.iii.A to Ecology upon completion of the tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports will be certified as specified in WAC 173-303-807(8), in accordance with Permit Condition WAC 173-303-680(2) and (3).

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

1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s).
2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified Permit Condition I.E.21.
3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s).
4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.10.K.1.b., with the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification System were met during the demonstration test, if any such mode was demonstrated.
5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.K.1.h.iii.D.1 through 4 above, 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 amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan, pursuant to Permit Condition III.10.K.1.h.iii.D.6.
6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions II.10.C.2.e. and f. The revised Demonstration Test Plan 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 F.

E. If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.K.E, as approved/modified pursuant to Permit Condition III.10.C.11.c. or d., is exceeded for HLW Vitrification System during the emission test, the Permittees will perform the following actions:

1. 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;
2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set 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 exceedance of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of the exceedance of the emission rate(s); and
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 revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan 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 F.

**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:**

**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 |
|---|---|---|---|---|---|---|---|---|
| [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 |

**Table III.10.K.E – HLW Vitrification System Estimated Emission Rates (RESERVED)**

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

**TABLE III.10.K.F - HLW Vitrification System Waste Feed Cut-off Parameters* [1](RESERVED)**

| Sub-system Designation | Instrument Tag Number | Parameter Description | Set-points During Normal Operation |
|---|---|---|---|
| RESERVED | RESERVED | RESERVED | RESERVED |

**Footnotes:**

*A continuous monitoring system will be used as defined in Permit Section III.10.C.1.

[1]Maximum 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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