LIQUID EFFLUENT RETENTION FACILITY & 200 AREA EFFLUENT TREATMENT FACILITY

CHANGE CONTROL LOG

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have a “Last Modification Date” which represents the last date the portion of the unit has been modified. The “Modification Number” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Last modification to Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility 
April 30, 2019

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LIQUID EFFLUENT RETENTION FACILITY & 200 AREA EFFLUENT TREATMENT FACILITY
PART III, OPERATING UNIT GROUP 3 PERMIT CONDITIONS

CHANGE CONTROL LOG

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PART III, OPERATING UNIT GROUP 3 PERMIT CONDITIONS
LIQUID EFFLUENT RETENTION FACILITY &
200 AREA EFFLUENT TREATMENT FACILITY
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PART III, OPERATING UNIT GROUP 3 PERMIT CONDITIONS
LIQUID EFFLUENT RETENTION FACILITY & 200 AREA EFFLUENT TREATMENT FACILITY

UNIT DESCRIPTION
The Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (200 Area ETF) consists of an aqueous waste treatment system that provides treatment, storage integral to the treatment process, and storage of secondary wastes from the treatment process for a variety of aqueous mixed waste. The 200 Area ETF is located in the 200 East Area. Aqueous wastes managed by the 200 Area ETF include process condensate from the LERF and 200 Area ETF and other aqueous waste generated from onsite remediation and waste management activities.


This Chapter provides unit-specific Permit conditions applicable to the dangerous waste management units for LERF and 200 Area ETF.

LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 3
Addendum A Part A Form, dated October 25, 2017
Addendum B Waste Analysis Plan, dated December 7, 2018
Addendum C Process Information, dated December 7, 2018
Addendum D Groundwater Monitoring, dated January 23, 2018
Addendum E Security Requirements, dated June 30, 2011
Addendum F Preparedness and Prevention, dated January 23, 2018
Addendum G Personnel Training, dated June 30, 2015
Addendum H Closure Plan, dated October 25, 2017
Addendum I Inspection Requirements, dated April 30, 2019
Addendum J Contingency Plan, dated April 30, 2019

DEFINITIONS
Flow Equalization: Flow equalization is the process by which concentrations of constituents are homogenized through blending of the wastewater in the LERF Basins, resulting in a more uniform loading of constituents prior to entering the appropriate treatment train.


ACRONYMS
LERF and 200 Area ETF 200-Area Liquids Processing Facility
III.3.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.3.A.1 The Permittees will comply with all Permit Conditions in this Chapter and its Addendums with respect to dangerous waste management and dangerous waste management units in LERF and 200 Area ETF, in addition to requirements in Permit Part I and Part II.

III.3.B GENERAL WASTE MANAGEMENT

III.3.B.1 The Permittees are authorized to accept dangerous and/or mixed waste for treatment in dangerous waste management units that satisfies the waste acceptance criteria in Permit Addendum B according to the waste acceptance procedures in Permit Addendum B. [WAC 173-303-300]

III.3.B.2 The Permittees are authorized to manage dangerous and/or mixed wastes physically present in the dangerous waste management units in LERF and 200 Area ETF as of the effective date of this Permit according to the requirements of Permit Condition III.3.B.1.

III.3.B.3 The Permittees are authorized to treat and/or store dangerous/mixed waste in the dangerous waste management units in LERF and 200 Area ETF according to the following requirements:

III.3.B.3.a The Permittees are authorized to treat, and store as necessary in support of treatment, dangerous waste in the 200 Area ETF tank systems identified in Permit Addendum C, Section C.2, and Section C.4 according to the Permit Conditions of this Chapter.

III.3.B.3.b The Permittees are authorized to store and treat those dangerous and/or mixed waste identified in Permit Addendum C, Section C.3, in containers according to the requirements of this Chapter. All container management activities pursuant to this Permit Condition will take place within the container storage areas or within the 200 Area ETF process area identified in Permit Addendum C, Figures C.2 and C.3.

III.3.B.3.c Treatment in containers authorized by Permit Condition III.3.B.3.b is limited to decanting of free liquids, and addition of sorbents to free liquids. The Permittees will ensure that sorbents are compatible with wastes and the containers. Sorbents will be compliant with the requirements of WAC 173-303-140(4)(b)(iv), incorporated by reference.

III.3.B.3.d The Permittees are authorized to treat aqueous waste in LERF Basins (Basins 42, 43 and 44) subject to the following requirements:

III.3.B.3.d.1 Following treatment in a LERF Basin, aqueous wastes must be treated in 200 Area ETF according to Permit Conditions III.3.B.3.a through c.; [40 CFR 268.4(2)(iii), incorporated by reference by WAC 173-303-140].

III.3.B.3.d.2 The Permittees must ensure that for each basin, either supernatant is removed on a flow-through basis, to meet the requirement of 40 CFR 268.4(a)(2)(ii) incorporated by reference by WAC 173-303-140, or incoming waste is shown to not contain solids by either: (1) sampling results showing the waste does not contain detectable solids, or (2) filtering through a 10 micron filter; [WAC 173-303-815(2)(b)(ii)].

III.3.B.4 The Permittees will maintain the physical structure of the LERF and 200 Area ETF as documented in the applicable sections of Permit Addendum C, Section C.2. [WAC 173-303-630(7), WAC 173-303-640(3), WAC 173-303-640(4)]

III.3.B.5 The Permittees are authorized to use treated effluent for recycle/makeup water purposes at the 200 Area ETF as outlined in Permit Addendum C, Section C.2.5.5, and the letters dated August 19, 2005, EPA Region 10 to Keith A. Klein; and August 8, 2005, Department of Ecology to Keith A. Klein. [WAC 173-303-815(2)(b)(ii)]
III.3.B.6 The Permittees will maintain and operate systems for the 200 Area ETF documented in Permit Addendum C, Section C.2.5 as necessary for proper operation of the 200 Area ETF, compliance with the conditions of this Permit, and protection of human health and the environment. For purposes of this Permit Condition, the Monitor and Control System documented in Permit Addendum C, Section C.2.5.1, is considered to include all indicators, sensors, transducers, actuators and other control devices connected to but remote from the centralized Monitor and Control System (MCS) computer.

III.3.B.7 The Permittees must complete the following requirements prior to acceptance for treatment in 200 Area ETF aqueous waste streams with listed waste numbers subject to the requirements of the State and Federal delisting: [WAC 173-303-815(2)(b)(ii)].

III.3.B.7.a The Permittees will prepare a written waste processing strategy according to the requirements of the State and Federal Delisting Actions Conditions (1)(a)(ii) and (1)(b), incorporated by reference, and Permit Addendum B, Section B.2.2.2.

III.3.B.7.b The proposed processing configuration for the 200 Area ETF, operating conditions for each processing unit, and the expected treated effluent characteristics based on the process model and treatability envelope data required by State and Federal Delisting Conditions (1)(a)(ii) and (1)(b).

III.3.B.7.c The Permittees will prepare a written waste processing strategy according to the requirements of the State and Federal Delisting Actions Conditions (1)(a)(ii) and (1)(b), incorporated by reference, and Permit Addendum B, Section B.2.2.2.

III.3.B.7.d The Permittees will place a copy of the written waste processing strategy required by Permit Condition III.3.B.7.a in the Hanford Facility Operating Record, LERF and 200 Area ETF file as part of the documentation of waste streams accepted for management at the 200 Area ETF.

III.3.B.8 Treatment of aqueous waste streams in the 200 Area ETF with listed waste numbers that are subject to the requirements of the state and federal delisting actions must comply with the requirements of State and Federal Delisting Condition (1)(c), incorporated by reference. [WAC 173-303-815(2)(b)(ii)]

III.3.B.9 The Permittees will manage treated effluent in the final verification tanks according to the requirements of the State and Federal Delisting Conditions (3) and (5), incorporated by reference. [WAC 173-303-815(2)(b)(ii)]

III.3.B.10 The Permittees will manage treated effluent from the 200 Area ETF according to the requirements of the Discharge Permit Number ST0004500 (Ecology 2014) and State and Federal Delisting Condition (7). [WAC 173-303-815(2)(b)(ii)]

III.3.B.11 The Permittees will ensure compliance with treatment standards (40 CFR 268, incorporated by reference by WAC 173-303-140) applicable to treated effluent prior to discharge to the SALDS, the delisting criteria at 40 CFR 261, Appendix IX, Table 2, and the corresponding state-approved delisting (dated August 8, 2005, all incorporated by reference). Sampling and analysis necessary for these demonstrations must meet the corresponding requirements in Permit Addendum B. [WAC 173-303-140, WAC 173-303-815(2)(b)(ii)]
III.3.C  WASTE ANALYSIS

III.3.C.1 The Permittees will comply with requirements in Permit Addendum B for sampling and analysis of all dangerous and/or mixed waste required by conditions in this Chapter.

[WAC 173-303-300]

III.3.C.2 The Permittees will have an accurate and complete waste profile as described in Permit Addendum B, Section B.2.1.2, for every waste stream accepted for management in LERF and 200 Area ETF. [WAC 173-303-380(1)(a),(b)]

III.3.C.3 The Permittees will place a copy of each waste profile required by Permit Condition III.3.C.2 in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.1.j. [WAC 173-303-380(1)(a),(b)]

III.3.C.4 The Permittees will make a copy of the waste profile required by Permit Condition III.3.C.2 available upon request. [WAC 173-303-380(1)(a),(b)]

III.3.C.5 Records and results of waste analysis described in this Permit will be maintained in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.1.b. [WAC 173-303-380(1)(a),(b)]

III.3.D  RECORDKEEPING AND REPORTING

III.3.D.1 The Permittees will place the following into the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I:


III.3.D.1.b Records and results of waste analysis, waste determinations (as required by Subpart CC) and trial tests required by WAC 173-303-300, General waste analysis, and by 40 CFR §264.1034, §264.1063, §264.1083, §265.1034, §265.1063, §265.1084, §268.4(a), and §268.7; [WAC 173-303-310(2)].

III.3.D.1.c An inspection log, summarizing inspections conducted pursuant to Permit Condition III.3.H.1; [WAC 173-303-380(1)(e)].


III.3.E  SECURITY

III.3.E.1 The Permittees comply with the Security requirements specific to the LERF and 200 Area ETF in Addendum E and Permit Attachment 3 as required by Permit Condition II.M. [WAC 173-303-310(2)]

III.3.F  PREPAREDNESS AND PREVENTION

III.3.F.1 The Permittees will comply with the Preparedness and Prevention requirements specific to LERF and 200 Area ETF in Addendum F. [WAC 173-303-340]

III.3.G  CONTINGENCY PLAN

III.3.G.1 The Permittees will comply with Addendum J, “Contingency Plan,” in addition to the requirements of Permit Condition II.A when applicable. [WAC 173-303-350]

III.3.H  INSPECTIONS

III.3.H.1 The Permittees will comply with Addendum I in addition to the requirements of Permit Condition II.X. [WAC 173-303-320]
III.3.I TRAINING PLAN

The Permittees will include the training requirements described in Addendum G of this Chapter specific to the dangerous waste management units and waste management activities at LERF and 200 Area ETF into the written training plan required by Permit Condition II.C.

III.3.J GENERAL REQUIREMENTS

III.3.J.1 The Permittees will comply with the requirements of WAC 173-303-395(1), incorporated by reference, for prevention of reaction of ignitable, reactive, or incompatible wastes.

III.3.J.2 Within 90 days of the effective date of the permit modification, the Permittee shall demonstrate to the department that the leak detection system for the WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17) is designed and operated to detect the presence of liquid in the secondary containment system at the earliest practicable time if the existing detection technologies or site conditions will not allow detection of a release within 24 hours. As part of this demonstration, the Permittees must consider alternative configurations for leak detection and this information will be provided to the department for concurrence. The department will provide a response within 30 days. [WAC 173-303-640(4)(c)(iii)]

III.3.J.2.a Prior to receipt of any dangerous waste in the WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17), the Permittees will submit the tightness test for 4”-WTP-001-M17 waste transfer system to the department. [WAC 173-303-640(3)(e)]

III.3.J.2.b Tightness test for WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17) will be performed at a frequency of every 10 years upon completion of Permit Condition III.3.J.2.a.

III.3.J.2.c Prior to receipt of any dangerous waste in the WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17), the Permittees will submit an installation integrity assessment report.

III.3.J.3 Modifications to the leak detection system for the WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17) will be made in accordance with Permit Condition I.C.3.

III.3.J.4 The electronic leak detection system for the WTP EMF transfer line to LERF Catch Basin 242-AL (4”-WTP-001-M17) shall be maintained and operated continuously when in use with the following exceptions:

III.3.J.4.a If the electronic leak detection system is not available, visual inspection shall be employed at the sight glass (FG-80W-001), located in LERF Catch Basin 242AL-42.

III.3.J.4.b The department must be notified if the electronic leak detection system is out of service for more than 90 days. This notification must include a schedule for repairing and returning the system to service within 90 days from notification, or longer if approved by the department.

III.3.J.5 Prior to receipt of any dangerous waste in the brine loadout system, the Permittees will submit a revised Addendum A, “Part A Form,” to include photograph of the 2025E Container Storage and Treatment Area.
III.3.J.6 Prior to receipt of any dangerous waste in Sump Tank (59A-TK-3), the Permittees will submit a revised Addendum A, “Part A Form,” to include photograph of Sump Tank (59A-TK-3) to the department.

III.3.J.7 Prior to receipt of any dangerous waste in the Sump Tank 59A-TK-3, an integrity assessment for installation will be submitted to the department.

III.3.J.8 Prior to receipt of any dangerous waste in the Sump Tank 59A-TK-3, the Permittees will submit the leak test for Sump Tank 59A-TK-3 to the department.

III.3.J.9 Prior to receipt of any dangerous waste in the brine loadout system, the Permittees will submit functional testing for the automatic shutoff valves (60J-334 and 60J-335) to the department.


III.3.J.11 Prior to operations of the brine loadout system, the Permittees must provide to Ecology for review and approval information demonstrating that the liquid brine waste stream will be shipped to authorized treatment, storage, or disposal facilities for treatment and disposal.

III.3.J.12 The brine loadout system must meet land disposal restriction requirements as specified in Permit Condition II.S and the Hanford Federal Facility Agreement and Consent Order.

III.3.K CLOSURE

III.3.K.1 The Permittees will close dangerous waste management units in the LERF and 200 Area ETF in accordance with Addendum H, “Closure Plan,” and Permit Condition II.J.

III.3.L POST CLOSURE – RESERVED

III.3.N RESERVED

III.3.O CONTAINERS

III.3.O.1 Container Storage and Treatment Unit Standards

III.3.O.1.a As part of or in addition to the requirements of Permit Condition III.3.B.2, the Permittees will ensure the integrity of container storage secondary containment and the chemically resistant coating described in Addendum C, Section C.3.4.1 as necessary to ensure any spills or releases to secondary containment do not migrate to the underlying concrete or soils.

III.3.O.1.a.1 Include documentation of any damage and subsequent repairs in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.

III.3.O.2 Container Management Standards

III.3.O.2.a The Permittees will maintain and manage wastes in accordance with the requirements of Addendum C, Section C.3.2. [WAC 173-303-630(2)]

III.3.O.2.b The Permittees will label containers in accordance with the requirements of Addendum C, Section C.3.2, and Section C.3.3. [WAC 173-303-630(3)]
III.3.O.2.c The Permittees will comply with the requirements for managing wastes in containers in WAC 173-303-630(5), incorporated by reference.

III.3.O.2.d The Permittees will ensure wastes are compatible with containers and with other wastes stored or treated in containers within the 200 Area ETF according to the requirements of Addendum C, Section C.3.1 and C.3.4.6. [WAC 173-303-630(4), WAC 173-303-630(9)]

III.3.O.2.e The Permittees may treat wastes in containers via decanting of free liquids and addition of sorbents. The Permittees may not use addition of sorbents for purposes of changing the treatability group of a waste with respect to the land disposal restriction standards of 40 CFR 268, incorporated by reference by WAC 173-303-140.

III.3.O.2.f The Permittees will remove any accumulated liquids from container storage areas in 200 Area ETF according to the requirements of Addendum C, Section C.3.4.5, to ensure containers are not in contact with free liquids and to prevent overflow of the container storage area secondary containment.

III.3.O.2.g The Permittees will comply with the requirements for air emissions from containers in Addendum C, Section C.6.3.2. [WAC 173-303-692]

III.3.O.2.h The accumulation of liquid waste stored in the 2025-ED Load-In Station will not be greater than the capacity of the containment pit and sump. [WAC 173-303-630(7)(b), WAC 173-303-630(7)(c)]

III.3.O.2.i Containers with free liquids must be placed on spill pallets when placed in the Outdoor Container Storage Area. [WAC 173-303-630]

III.3.P TANK SYSTEMS

III.3.P.1 Tank System Requirements

III.3.P.1.a The Permittees will develop a schedule for conducting Integrity Assessments (IA). The schedule will meet the requirements of Addendum C, Section C.4.1.5, and consideration of the factors in WAC 173-303-640(2)(e) or WAC 173-303-640(3)(b) as applicable:

III.3.P.1.b The Permittees will maintain a copy of the schedule required by Permit Condition III.3.P.1.a, in the Hanford Facility Operating Record, LERF and 200 Area ETF file, and conduct periodic integrity assessments according to the schedule. The Permittees will document results of integrity assessments conducted according to the IA in the Hanford Facility Operating Record, LERF and 200 Area ETF file.

III.3.P.1.c If a tank system is found to be leaking, or is unfit for use, the Permittees must follow the requirements of WAC 173-303-640(7), incorporated by reference. [WAC 173-303-640(3)(b)]

III.3.P.2 Tank System Operating Requirements

III.3.P.2.a The Permittees will comply with the requirements of WAC 173-303-640(5)(a), incorporated by reference.

III.3.P.2.b The Permittees will comply with the requirements of Addendum C, Section C.4.4.2. [WAC 173-303-640(5)(b)]

III.3.P.2.c The Permittees will comply with the requirements of Addendum C, Section C.4.5. [WAC 173-303-640(5)(d)]

III.3.P.2.d The Permittees will comply with the requirements of WAC 173-303-640(7), incorporated by reference, in response to spills or leaks from tanks systems at 200 Area ETF. [WAC 173-303-640(5)(e)]
III.3.P.2.e  The Permittees will ensure that the Waste Processing Strategy required by Permit Condition III.3.B.7.a, provides for the immediate treatment or blending of waste accepted for management at the 200 Area ETF such that the resulting waste or mixture is no longer reactive or ignitable when further managed in 200 Area ETF tank systems. [WAC 173-303-640(9)]

III.3.P.2.f  The Permittees will comply with the requirements of WAC 173-303-640(10), incorporated by reference.

III.3.Q  SURFACE IMPOUNDMENTS

III.3.Q.1  The Permittees will maintain the three LERF Basins according to the requirements of WAC 173-303-650(2)(f), incorporated by reference.

III.3.Q.2  The Permittees will operate the LERF Basins according to the requirements of Addendum C, Section C.5.3, and Addendum I, Section I.1.2.3.1 to prevent over-topping. [WAC 173-303-650(2)(c)]

III.3.Q.3  The Permittees will develop and maintain, and operate the LERF Basins to ensure that any flow of waste into the impoundment can be immediately shut off in the event of overtopping or liner failure. [WAC 173-303-650(2)(d)]

III.3.Q.4  The Permittees will comply with the requirements of WAC 173-303-650(2)(g), incorporated by reference.

III.3.Q.5  The Permittees will comply with the requirements of WAC 173-303-650(4)(b), incorporated by reference.

III.3.Q.6  The Permittees will comply with the requirements of WAC 173-303-650(4)(c), incorporated by reference. The certification required by this Permit Condition must be provided to Ecology no later than seven calendar days after the date of the certification. A copy of the certification will be placed in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.1. [WAC 173-303-650(4)(c)]


III.3.Q.8  The Permittees will comply with the requirements of WAC 173-303-650(5)(d) for any LERF Basin that has been removed from service in accordance with Permit Condition III.3.Q.7 that the Permittees will restore to service. [WAC 173-303-650(5)(d)]

III.3.Q.9  The Permittees will close any LERF Basin removed from service in accordance with the requirements of Permit Condition III.3.Q.7 or a basin that cannot be repaired or that the Permittees will not to return to service. [WAC 173-303-650(5)(e)]

III.3.Q.10 The Permittees will comply with the requirements of Addendum C, Section C.5.10 with respect to management of ignitable or reactive wastes in the LERF Basins. [WAC 173-303-650(7)]

III.3.Q.11 The Permittees can place incompatible wastes and materials in the same LERF Basin only if in compliance with the requirements of WAC 173-303-395(1)(b), (c). [WAC 173-303-650(8)]

III.3.Q.12 The Permittees will use the action leakage rate in Addendum C, Section C.5.8, for operation of LERF Basins, and comply with the requirements of WAC 173-303-650(10)(b). [WAC 173-303-650(10)]
III.3.Q.13 The Permittees will comply with the requirements of WAC 173-303-650(11), incorporated by reference.

III.3.Q.14 The Permittees will comply with the requirements of 40 CFR 264, Subpart CC, incorporated by reference by WAC 173-303-692.

III.3.R GROUNDWATER

III.3.R.1 The Permittees will comply with the requirements of Addendum D, “Groundwater Monitoring Plan.” [WAC 173-303-645]

III.3.R.2 All wells constructed pursuant to this Permit will be constructed in compliance with Chapter 173-160 WAC incorporated by reference through WAC 173-303-645(8)(c).

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