



**U.S. Department of Energy  
Hanford Site**

January 8, 2021

21-ESQ-0136

Mr. David Bowen, Program Manager  
Nuclear Waste Program  
Washington State Department of Ecology  
3100 Port of Benton Boulevard  
Richland, Washington 99354

Dear Mr. Bowen:

**CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE  
CONSERVATION AND RECOVERY ACT PERMIT, QUARTER ENDING DECEMBER 31,  
2020**

In accordance with the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste (Permit Condition I.C.3, attached are Class 1 permit modification documents for the quarter ending December 31, 2020.

The attached modifications pertain to information contained in Attachment 4A of the Permit, "Building Emergency Directors/Building Wardens" and Part III of the Permit, "Unit-Specific Conditions for Final Status Operations." The changes to Attachment 4A affect Table 4A-1, "Building Emergency Directors/Building Wardens for Units in the Permit." The changes to Part III affect the Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility (Operating Unit Group 3), Waste Treatment and Immobilization Plant (Operating Unit Group 10), the Integrated Disposal Facility (Operating Unit Group 11), and Capsule Interim Storage (Operating Unit Group 19).

The U.S. Department of Energy, Richland Operations Office (RL) and the Washington State Department of Ecology (Ecology) use Permit Change Notices (PCNs) to help track Class 1 Permit Modifications. This modification package add accesses the following PCNs:

<b><u>PCN Identifier:</u></b>	<b><u>Affected Permit Section:</u></b>
PCN-4A-2020-02	Attachment 4A
PCN-LERF/ETF-2020-03	Unit Specific Conditions and Addendum C
PCN-LERF/ETF-2020-04	Unit Specific Conditions and Addendum A
24590-LAB-PCN-ENV-19-003	Appendices 11.1 and 11.2
PCN-IDF-2020-05	Unit Specific Conditions, Chapter 6.0, and Addendum J.1
PCN-CIS-2020-01	Unit Specific Conditions and Addendum J

The attached changes are based on permittee reviews of Attachment 4A performed during November 2020. Changes affecting Attachment 4A content that emerge after the November 2020 reviews will be addressed in next quarter's Class 1 Modification Package. Please note, pursuant to Permit Condition II.A.4, up-to-date Building Emergency Director/Building Warden information is maintained as described in the unit specific Building Emergency Plans and Facility Response Plans.

Individuals may request hard copies if the electronic files cannot be accessed. Requests can be made to Ecology by contacting Ecology's Resource Center at (509) 372-7950.

If you have any questions, please contact me, or your staff may contact Glyn D. Trenchard, Acting Assistant Manager for Safety and Environment, RL, on (509) 373-4016.

Sincerely,

**Brian T. Vance**

Digitally signed by Brian T.  
Vance

Date: 2021.01.08 12:00:50 -08'00'

Brian T. Vance  
Manager

ESQ:ACM

Attachment:  
Class 1 Modifications for Quarter Ending  
December 31, 2020

cc w/attach:  
D. J. Alexander, Ecology  
J. L. Cantu, Ecology  
Administrative Record, TSD: H-0-1, H-0-8,  
D-2-11, S-2-8, T-2-8, S-2-12  
Ecology NWP Library  
Environmental Portal  
HF Operating Record (J. K. Perry)  
WRPS Correspondence Control

cc w/o attach:  
J. E. Bramson, CHPRC  
R. E. Bullock, CHPRC  
A. S. Carlson, Ecology  
S. L. Dahl, Ecology  
S. A. Davis, BNI  
E. A. Garcia, CHPRC  
M. E. Jones, Ecology

P. W. Martin, CHPRC  
M. T. Schanke, CHPRC  
D. G. Singleton, CHPRC  
B. A. Sparks, BNI  
S. A. Thompson, WRP  
E. J. Van Mason, WRPS  
M. B. Wilson, MSA

ATTACHMENT  
21-ESQ-0136

**Class 1 Modifications for Quarter Ending December 31, 2020**

Consisting of 104 pages,  
including this cover page

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**Hanford Facility RCRA Permit Modification Notification Forms**

**Attachment 4A (Building Emergency Directors/Building Wardens),**

**Table 4A-1 (Building Emergency Directors/Building Wardens for Units in the Permit)**

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**Index**

Page 2 of 3: Attachment 4A (Building Emergency Directors/Building Wardens), Table 4A-1 (Building Emergency Directors/Building Wardens for Units in the Permit)

Page 3 of 3: Instructions

Reviewed by DOE Program Office:

*Glyn Trenchard*

11/30/2020

\_\_\_\_\_  
DOE Program Office Name

\_\_\_\_\_  
Date

**Hanford Facility RCRA Permit Modification Form**

Unit:  <b>Not Applicable</b>	Permit Part <b>Attachment 4A (Building Emergency Directors/Building Wardens)</b>
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Description of Modification:

*Table 4A-1 (Building Emergency Directors/Building Wardens for Units in the Permit)*

The subject table is being updated pursuant to Permit Condition II.A.4

WAC 173-303-830 Modification Class	Class 1	Class 1 <sup>1</sup>	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number:

B.6.d. Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan ..

Modification Concurrence:  Yes  No

Reviewed by Ecology:  
 Schleif,  
 Stephanie (ECY)  
Digitally signed by  
 Schleif, Stephanie (ECY)  
 Date: 2020.12.01  
 17:42:36 -08'00'

---

S. N Schleif Date

**Instructions:**

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Revise Attachment 4A, Table 4A-1 as shown herein.

Table 4A-1 Building Emergency Directors/Building Wardens for Units in the Permit

Contractor	Unit	Building Emergency Directors (BED)/Building Wardens (BW)	Building Emergency Plan/Facility Response Plan Location
CH2M HILL Plateau Remediation Company (CHPRC)	400 Area Waste Management Unit/ Fast Flux Test Facility	Plunkett, Roy <a href="#">Precechtel, Michael</a> Roberts, Justin	MO294 <a href="#">BED Emergency Vehicle</a>
CHPRC	PUREX Storage Tanks	Plunkett, Roy <a href="#">Precechtel, Michael</a> Roberts, Justin	MO294, Conference Room BED Emergency Vehicle
CHPRC	Integrated Disposal Facility (IDF)	Duranceau, David Ahlers, Jeff Eng, Shane Dehmer, Chris	<del>MO518</del> MO607
Washington River Protection Solutions LLC (WRPS)	Liquid Effluent Retention Basin and 200 Area Effluent Treatment Facility (ETF)	Angleton, Bill <a href="#">Biddle, Brian</a> Biglin, Shaun Conley, Jeff Demiter, Scott <a href="#">Doremus, Will</a> Garner, Mary Ann <a href="#">Jones, Heidi</a> <a href="#">Mathews, Adam</a> <a href="#">Guthrie, Mike</a> Noel, Dan Lillie, Glenn <a href="#">Robertson, Wayne</a>	2025-EETF Control Room
CHPRC	Capsule Storage Area (CSA)	Parker, Jeff	MO232

**Table 4A-1 Building Emergency Directors/Building Wardens for Units in the Permit**

Contractor	Unit	Building Emergency Directors (BED)/Building Wardens (BW)	Building Emergency Plan/Facility Response Plan Location
WRPS	242-A Evaporator	Beaulaurier, Kyle Blair, Bryan Cuttlers, Matthew Ellis, Mark Frisby, Kirk Maygra, Ryan McFerran, Brandon <a href="#">Niebuhr, Dan</a> Nielson, Jeffery Wolff, John	Central Shift Office/ Incident Command Post (ICP), 200 East Area
Pacific Northwest National Laboratory (PNNL)	325 Hazardous Waste Treatment Units	Saueressig, Paul Wandler, Dan Hansen, Eric	325 Building Room 527
Bechtel National, Inc. (BNI)	Waste Treatment and Immobilization Plant (WTP)	Downs, Greg Feather, Sean Hankins, Jeffrey Loveless, JD Sams, Jason Spencer, Terry Zaleski, Michael	Low-Activity Waste Annex, Room A-211
None (Department of Energy [DOE] Only)	300 Area Process Trenches	N/A*	N/A*
None (DOE Only)	183-H Solar Evaporation Basins	N/A*	N/A*

\*The Permit does not specify unit-specific contingency plan requirements for the unit group.

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**Hanford Facility RCRA Permit Change Notice**

**Part III, Operating Unit Group 3**

**Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility**

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**Index**

<b>Page</b>	<b>Permit Section</b>
Page 2 of 3:	Permit Conditions
Page 3 of 3:	Addendum C, Process Information

Submitted by WRPS Co-Operator:

Reviewed by DOE-ORP Program Office:

**Monica Kembel** Digitally signed by Monica Kembel  
Date: 2020.10.05 12:57:32 -07'00'

**Brian A. Harkins** Digitally signed by Brian A.  
Harkins  
Date: 2020.10.05 17:34:07 -07'00'

\_\_\_\_\_  
Monica R. Kembel

\_\_\_\_\_  
Date

\_\_\_\_\_  
Rob G. Hastings

\_\_\_\_\_  
Date



**Hanford Facility RCRA Permit Change Notice**

Unit: <b>Liquid Effluent Retention Facility &amp; 200 Area Effluent Treatment Facility</b>	Permit Part <b>Part III, Operating Unit Group 3</b>
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Description of Modification:  
**Addendum C, Process Information:**  
 Section C.5.5, corrected valve number from “80W-006” to “80W-005”, to reflect first isolation valve as boundary between the tank system and the surface impoundment for transfer line from WTP-EMF to LERF Catch Basin 242AL-42.  
 Reference drawing H-2-88766, Sheet 2.

WAC 173-303-830 Modification Class Please mark the Modification Class:	Class 1	Class '1	Class 2	Class 3
	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1  
 Enter wording of WAC 173-303-830, Appendix I Modification citation: General Permit Provisions, Administrative and informational changes.

Concurrency Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason) <u>Reason for Non-concurrence:</u>	Reviewed by Ecology: Schleif, Stephanie (ECY) Digitally signed by Schleif, Stephanie (ECY) Date: 2020.10.20 12:03:47 -07'00'
	Stephanie Schleif <span style="float: right;">Date</span>

**Replace the Following:**

- Permit Conditions
- Addendum C, Process Information

**Reference Drawing**

- H-2-88766, Sheet 2 Rev. 17, P&ID LERF Basin & ETF Influent Evaporator

1                   **PART III, OPERATING UNIT GROUP 3 UNIT-SPECIFIC PERMIT CONDITIONS**  
 2                                   **LIQUID EFFLUENT RETENTION FACILITY &**  
 3                                   **200 AREA EFFLUENT TREATMENT FACILITY**

4  
 5  
 6                   **UNIT DESCRIPTION**

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

13                The LERF consists of three lined surface impoundments, or basins. Aqueous waste from LERF is  
 14                pumped to the 200 Area ETF for treatment in a series of process units, or systems, that remove or destroy  
 15                essentially all of the dangerous waste constituents. The treated effluent is discharged to a State-Approved  
 16                Land Disposal Site (SALDS) north of the 200 West Area, under the authority of a Washington State Waste  
 17                Discharge Permit Number ST0004500 (Ecology 2014) and 200 Area ETF Delisting (40 Code of Federal  
 18                Regulations [CFR] 261, Appendix IX, Table 2). Construction of the LERF began in 1990. Waste  
 19                management operations began at LERF in April 1994. Construction of the 200 Area ETF began in 1992.  
 20                Waste management operations began at 200 Area ETF in November of 1995.

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

23                **LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 3**

- 24                Addendum A   Part A Form, dated May 19, 2020  
 25                Addendum B   Waste Analysis Plan, dated May 19, 2020  
 26                Addendum C   Process Information, dated ~~TBD~~ ~~June 25, 2020~~  
 27                Addendum D   Groundwater Monitoring, dated January 23, 2018  
 28                Addendum E   Security Requirements, dated June 30, 2011  
 29                Addendum F   Preparedness and Prevention, dated May 19, 2020  
 30                Addendum G   Personnel Training, dated June 30, 2015  
 31                Addendum H   Closure Plan, dated May 19, 2020  
 32                Addendum I   Inspection Requirements, dated May 19, 2020  
 33                Addendum J   Contingency Plan, dated June 24, 2020

34                **DEFINITIONS**

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

38                **State and Federal Delisting Actions:** The state delisting action pursuant to Washington Administrative  
 39                Code (WAC) 173-303-910(3), August 8, 2005, and the federal delisting action appearing in 40 CFR 261,  
 40                Appendix IX, Table 2 applicable to the United States, Department of Energy, Richland, Washington.

41                **ACRONYMS**

42                LERF and 200 Area ETF                   200-Area Liquids Processing Facility

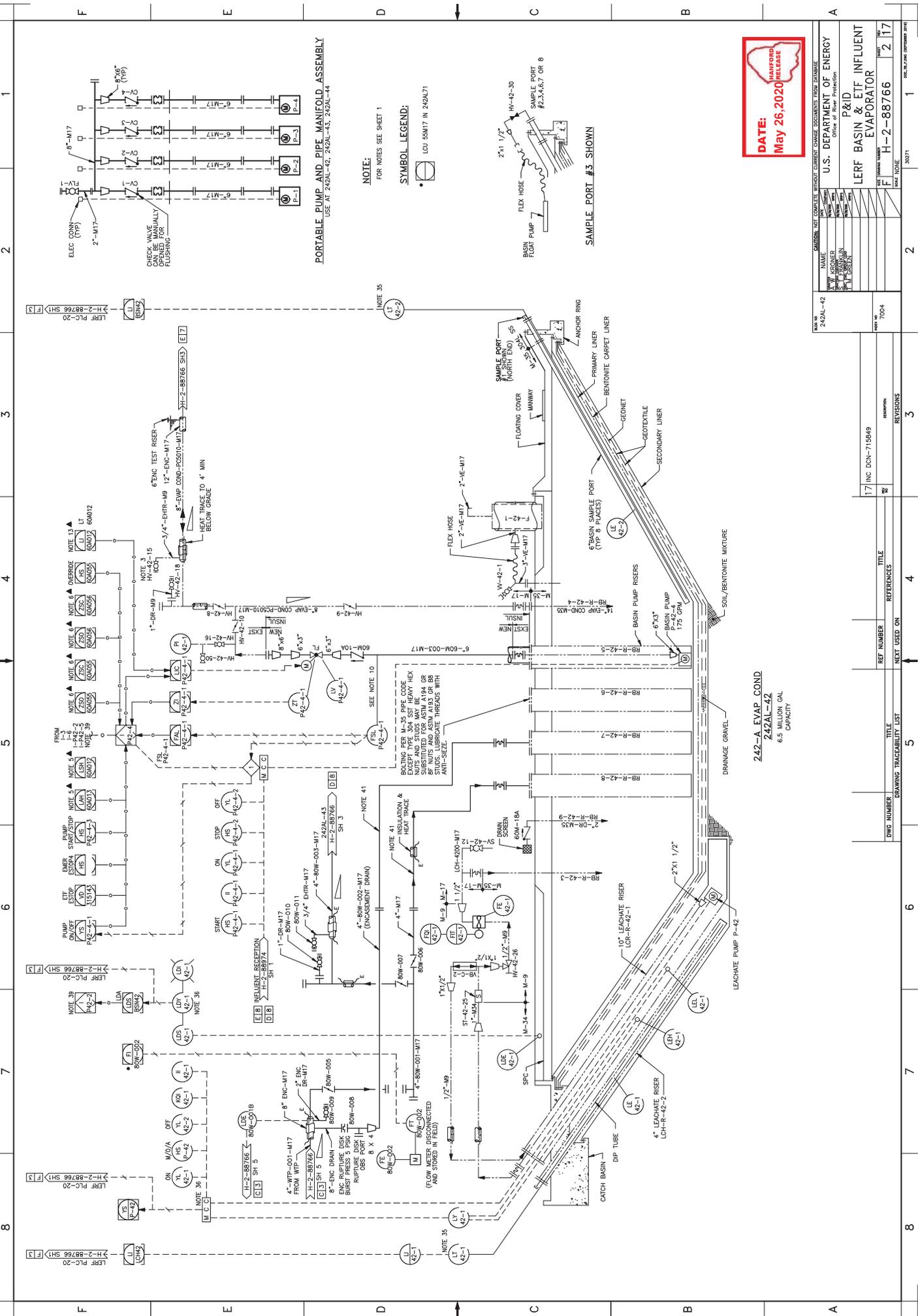
1 **LERF Basins to/from 200 Area ETF.** Aqueous waste from the LERF basins to the 200 Area ETF surge  
2 tank is transferred through one of two buried fiberglass pipelines interfacing with LERF Catch Basin  
3 242AL-43 or LERF Catch Basin 242AL-44. Leak detection consists of low-point electronic leak  
4 detection elements. The leak detection system alarms in the 200 Area Control Room if a leak develops.  
5 If the electronic leak detection system is not available, visual inspection can be employed by opening a  
6 drain valve in the surge tank secondary containment (200 Area ETF end of the transfer pipelines) to check  
7 for no liquid in the annular space between the inner and outer pipe during waste transfers.

8 **Inter-Basin Transfers.** Within the LERF catch basins, aboveground piping serves to transfer waste from  
9 one basin to another. Inter-basin piping interfaces at each catch basin. Drawing H-2-88766, Sheets 1  
10 through 4, provide schematic diagrams of the piping system at LERF. Inter-basin piping is sloped from  
11 Basin 42 toward Basin 44. Leak detection consists of single-low point electronic leak detection elements  
12 located at the end of the encasement pipe at Basin 43 and Basin 44, which alarm in the 200 Area ETF  
13 Control Room. A catch basin is provided at the northwest corner of each basin where the inlet pipes,  
14 leachate risers, and transfer pipe risers emerge from the basin. The catch basin consists of an 8-inch thick  
15 concrete pad at the top of the dike. The perimeter of the catch basin has an 8-inch-high curb and the  
16 concrete is coated with a chemical resistant epoxy sealant. The concrete pad, which has an electronic leak  
17 detection element, is sloped so that any leaks or spills from the piping or pipe connections will drain into  
18 the basin, which have electronic leak detection elements that alarm in the ETF Control Room. The catch  
19 basin provides an access point for inspecting, servicing, and operating various systems such as transfer  
20 valving, leachate level instrumentation, and leachate pump. Drawing H-2-79593 provides a schematic  
21 diagram of the catch basins.

22 **WTP-EMF to LERF Catch Basin 242AL-42.** The process condensate transfer line (4"-WTP-001-M17)  
23 from WTP-EMF to LERF Catch Basin 242AL-42 is centrifugally cast from LERF Basin 42 to Node 8A  
24 and is stainless steel from Node 8A to WTP-EMF. The piping material is ASTM D-2296, "Filament  
25 Wound Fiberglass Resin Pipe." The 4-inch carrier piping is centered and supported within 8-inch  
26 containment piping. Pipe supports are fabricated of the same material as the pipe, and meet the strength  
27 requirements of ASME B31.3 (ASME 1996) for dead weight, thermal, and seismic loads. The transfer  
28 line (4"-WTP-001-M17) leaving the WTP-EMF tank system is considered ancillary equipment to the  
29 LERF and 200 Area ETF, from the WTP fence line up to LERF Catch Basin 242AL-42, valve  
30 ~~80W-00580W-006~~; after valve ~~80W-00580W-006~~ the components belong to the surface impoundment.

31 The process condensate from WTP-EMF can be transferred to LERF by using a pump located at  
32 WTP-EMF, and approximately 6,340 feet of pipe (from Node 8A to LERF), consisting of a 4-inch carrier  
33 pipe within an 8-inch outer containment pipeline. The encased fiberglass transfer line (4"-WTP-001-  
34 M17) slopes toward LERF Catch Basin 242AL-42, and runs below grade up to the LERF Basins. The  
35 encasement line (8"-ENC-M17) and WTP-EMF transfer line (4"-WTP-001-M17) is equipped with a  
36 single-point electronic leak detection element at Catch Basin 242AL-42, and sight glass (FG-80W-001),  
37 located in close proximity to the electronic leak detection element at LERF Catch Basin 242AL-42.

38 If a leak develops in the primary pipe, fluid will travel down the interior of the secondary containment  
39 pipe to a leak detection system located at LERF Catch Basin 242AL-42. Upon detection of a leak, a  
40 general alarm sounds in the 200 Area ETF Control Room. Any leaked waste into the encasement line is  
41 gravity drained to LERF Basin 42. If the electronic leak detection system is not available, visual  
42 inspection can be employed at the sight glass (FG-80W-001), located in LERF Catch Basin 242AL-42.  
43 Upon verification of a leak, the 200 Area ETF shift manager will direct shutdown of the aqueous waste  
44 through the transfer line(s). The pump located at WTP-EMF is shut down, stopping the flow of aqueous  
45 waste through the transfer pipeline.



DATE	242AL-42
NAME	U.S. DEPARTMENT OF ENERGY
DESIGNER	P&ID
CHECKER	LERF BASIN & ETf INFLUENT
DATE	EVAPORATOR
NO.	H-2-88766
REV.	2
BY	17
DATE	INC DDN-715649
NO.	7004
REV.	REVISIONS
NO.	TITLE
NO.	REFERENCES
NO.	REF NUMBER
NO.	NEXT USED ON
NO.	DWG NUMBERS
NO.	DRAWING TRACEABILITY LIST

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**Hanford Facility RCRA Permit Change Notice**

**Part III, Operating Unit Group 3**

**Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility**

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**Index**

<b>Page</b>	<b>Permit Section</b>
Page 2 of 3:	Permit Conditions
Page 3 of 3:	Addendum A, Part A Form

Submitted by WRPS Co-Operator:

Reviewed by DOE-ORP Program Office:

**Monica Kembel** Digitally signed by Monica Kembel  
Date: 2020.10.28 06:24:10 -07'00'

**Brian A. Harkins** Digitally signed by Brian A.  
Harkins  
Date: 2020.11.02 10:43:01 -08'00'

\_\_\_\_\_  
Monica R. Kembel

\_\_\_\_\_  
Date

\_\_\_\_\_  
Rob G. Hastings

\_\_\_\_\_  
Date



**Hanford Facility RCRA Permit Change Notice**

Unit: <b>Liquid Effluent Retention Facility &amp; 200 Area Effluent Treatment Facility</b>	Permit Part <b>Part III, Operating Unit Group 3</b>
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Description of Modification:

**Addendum A, Part A Form:**

Revised Addendum A, "Part A Form," to include Figure A.29, photograph of Load-In Station Filter Drain Tank (59A-TK-3) to complete Permit Condition III.3.J.6.

WAC 173-303-830 Modification Class	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: **A.8**

Enter wording of WAC 173-303-830, Appendix I Modification citation: Changes to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility).

Modification Approved:  Yes  No (state reason)

Reason for Non-concurrence:

**Reviewed by Ecology:**

Schleif,  
Stephanie (ECY)

Digitally signed by  
Schleif, Stephanie (ECY)  
Date: 2020.11.09  
13:18:17 -08'00'

**Stephanie Schleif**

Date

**Replace the Following:**

- Permit Conditions
- Addendum A, Part A Form

**Integrity Assessment and Leak Test Documentation required by Permit Conditions III.3.J.7 and III.3.J.8:**

- RPP-IQRPE-50051, ETF Load-in Filter Drain System IQRPE Installation Assessment Report

1                   **PART III, OPERATING UNIT GROUP 3 UNIT-SPECIFIC PERMIT CONDITIONS**  
 2                                   **LIQUID EFFLUENT RETENTION FACILITY &**  
 3                                   **200 AREA EFFLUENT TREATMENT FACILITY**

4  
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7                   The Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (200 Area ETF)  
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35                **Flow Equalization:** Flow equalization is the process by which concentrations of constituents are  
 36                homogenized through blending of the wastewater in the LERF Basins, resulting in a more uniform  
 37                loading of constituents prior to entering the appropriate treatment train.

38                **State and Federal Delisting Actions:** The state delisting action pursuant to Washington Administrative  
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 40                Appendix IX, Table 2 applicable to the United States, Department of Energy, Richland, Washington.

41                **ACRONYMS**

42                LERF and 200 Area ETF                   200-Area Liquids Processing Facility

- 1 ~~III.3.J.6~~ Prior to receipt of any dangerous waste in Sump Tank (59A-TK-3), the Permittees will  
2 submit a revised Addendum A, "Part A Form," to include photograph of Sump Tank  
3 (59A-TK-3) to the department.
- 4 ~~III.3.J.7~~ Prior to receipt of any dangerous waste in the Sump Tank 59A-TK-3, an integrity  
5 assessment for installation will be submitted to the department.
- 6 ~~III.3.J.8~~ Prior to receipt of any dangerous waste in the Sump Tank 59A-TK-3, the Permittees will  
7 submit the leak test for Sump Tank 59A-TK-3 to the department.
- 8 ~~III.3.J.9~~ III.3.J.6 Prior to receipt of any dangerous waste in the brine loadout system, the  
9 Permittees will submit functional testing for the automatic shutoff valves (60J-334 and  
10 60J-335) to the department.
- 11 ~~III.3.J.10~~ III.3.J.7 Prior to operations of the brine loadout system, the Permittees must provide to  
12 Ecology for review and approval information demonstrating that the liquid brine waste  
13 stream will be shipped to authorized treatment, storage, or disposal facilities for treatment  
14 and disposal.
- 15 ~~III.3.J.11~~ III.3.J.8 The brine loadout system must meet land disposal restriction requirements as  
16 specified in Permit Condition II.S and the Hanford Federal Facility Agreement and  
17 Consent Order.
- 18 **III.3.K CLOSURE**
- 19 **III.3.K.1** The Permittees will close dangerous waste management units in the LERF and 200 Area  
20 ETF in accordance with Addendum H, "Closure Plan," and Permit Condition II.J.  
21 [WAC 173-303-610(3)(a)]
- 22 **III.3.L POST CLOSURE – RESERVED**
- 23 **III.3.M CRITICAL SYSTEMS – RESERVED**
- 24 **III.3.N RESERVED**
- 25 **III.3.O CONTAINERS**
- 26 **III.3.O.1** Container Storage and Treatment Unit Standards
- 27 **III.3.O.1.a** As part of or in addition to the requirements of Permit Condition III.3.B.2, the Permittees  
28 will ensure the integrity of container storage secondary containment and the chemically  
29 resistant coating described in Addendum C, Section C.3.4.1 as necessary to ensure any  
30 spills or releases to secondary containment do not migrate to the underlying concrete or  
31 soils.
- 32 **III.3.O.1.a.1** Include documentation of any damage and subsequent repairs in the Hanford Facility  
33 Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.I.
- 34 **III.3.O.2** Container Management Standards
- 35 **III.3.O.2.a** The Permittees will maintain and manage wastes in accordance with the requirements of  
36 Addendum C, Section C.3.2. [WAC 173-303-630(2)]
- 37 **III.3.O.2.b** The Permittees will label containers in accordance with the requirements of  
38 Addendum C, Section C.3.2, and Section C.3.3. [WAC 173-303-630(3)]
- 39 **III.3.O.2.c** The Permittees will comply with the requirements for managing wastes in containers in  
40 WAC 173-303-630(5), incorporated by reference.



*A.29. 59A-TK-3 Filter Drain Sump Tank*

*Photo 10/2020*

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**ADDENDUM A**  
**LIQUID EFFLUENT RETENTION FACILITY & 200 AREA EFFLUENT TREATMENT FACILITY**  
**PART A FORM**

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 <b>WASHINGTON STATE DEPARTMENT OF E C O L O G Y</b>		<h2 style="margin: 0;">Addendum A</h2> <h3 style="margin: 0;">Part A Form</h3>									
<b>Date Received</b>		<b>Reviewed by:</b> Schleif, Stephanie (ECY)	<b>Date:</b>								
Month Day Year		<b>Approved by:</b> Schleif, Stephanie (ECY)	<b>Date:</b>								
1	1	0	4	2	0	2	0				
<b>I. This form is submitted to: (place an "X" in the appropriate box)</b>											
<input checked="" type="checkbox"/>	Request modification to a final status permit (commonly called a "Part B" permit)										
<input type="checkbox"/>	Request a change under interim status										
<input type="checkbox"/>	Apply for a final status permit. This includes the application for the initial final status permit for a site or for a permit renewal (i.e., a new permit to replace an expiring permit).										
<input type="checkbox"/>	Establish interim status because of the wastes newly regulated on:					(Date)					
List waste codes:											
<b>II. EPA/State ID Number</b>											
W	A	7	8	9	0	0	0	8	9	6	7
<b>III. Name of Facility</b>											
U.S. Department of Energy – Hanford Facility											
<b>IV. Facility Location (Physical address not P.O. Box or Route Number)</b>											
<b>A. Street</b>											
Refer to Permit Attachment 2, Hanford Facility Permit Legal Description											
<b>City or Town</b>					<b>State</b>	<b>ZIP Code</b>					
Near Richland					WA						
<b>County Code</b>		<b>County Name</b>									
0	0	5	Benton								
<b>B. Land Type</b>	<b>C. Geographic Location</b>				<b>D. Facility Existence Date</b>						
	Latitude (degrees, mins, secs)		Longitude (degrees, mins, secs)		Month	Day	Year				
F	Refer to TOPO Map (Section XV)				1	1	1	9	8	0	
<b>V. Facility Mailing Address</b>											
<b>Street or P.O. Box</b>											
P.O. Box 450											
<b>City or Town</b>					<b>State</b>	<b>ZIP Code</b>					
Richland					WA	99352					

VI. Facility contact (Person to be contacted regarding waste activities at facility)													
Name (last)						(first)							
Vance						Brian							
Job Title						Phone Number (area code and number)							
Manager						(509) 372-2315							
Contact Address													
Street or P.O. Box													
P.O. Box 450													
City or Town						State		ZIP Code					
Richland						WA		99352					
VII. Facility Operator Information													
A. Name									Phone Number				
U.S. Department of Energy Owner/Operator Washington River Protection Solutions, LLC Co-Operator for LERF & 200 Area ETF									(509) 372-2315 (509) 376-2574				
Street or P.O. Box													
P.O. Box 450 P.O. Box 850													
City or Town						State		ZIP Code					
Richland						WA		99352					
B. Operator Type		F											
C. Does the name in VII.A reflect a proposed change in operator?						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
If yes, provide the scheduled date for the change:						Month		Day		Year			
D. Is the name listed in VII.A, also the owner? If yes, skip to Section VIII.C.									<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
VIII. Facility Owner Information													
A. Name						Phone Number (area code and number)							
U.S. Department of Energy Owner/Operator						(509) 372-2315							
Street or P.O. Box													
P.O. Box 450													
City or Town						State		ZIP Code					
Richland						WA		99352					
B. Owner Type		F											
C. Does the name in VIII.A reflect a proposed change in owner?						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
If yes, provide the scheduled date for the change:						Month		Day		Year			
IX. NAICS Codes (5/6 digit codes)													
A. First						B. Second							
5	6	2	2	1	1	5	6	2	9	1	0	Waste Treatment & Disposal	Remediation Services
C. Third						D. Fourth							
5	4	1	7	1	5	9	2	4	1	1	0	Research & Development in the Physical, Engineering and Life Sciences	Administration of Air & Water Resource & Solid Waste Management Programs

X. Other Environmental Permits (see instructions)															
A. Permit Type			B. Permit Number										C. Description		
E			A	O	P	0	0	-	0	5	-	0	0	6	Title V Air Operating Permit. Incorporation of current non-radiological Notice of Construction permits and FF-01 radiological licenses into the AOP may be delayed up to 2 years.
E			D	E	L	I	S	T	I	N	G				ETF Delisting, 70 Federal Register (FR) 44496, dated August 3, 2005
E			T	S	C	A									Toxic Substance Control Act Risk-based Disposal approval Application for Management of Polychlorinated Biphenyl Remediation Waste at the 200 Area Liquid Waste Processing Facilities, dated June 8, 2004
E			O	A	W	T	-	1	0	7					Approval of the Request for Approval of Alternate Reuse Practices for the 200 Area Effluent Treatment Facility (ETF) Treated Effluent, 05-AMCP-0378, dated August 3, 2005
E			S	T	0	0	0	4	5	0	0				WAC 173-216, State Waste Discharge Permit for the 200 Area Effluent Treatment Facility State-Approved Land Disposal Site
E			S	T	0	0	0	4	5	1	1				WAC 173-216, State Waste Discharge Permit Program, Sitewide Permit for Miscellaneous Streams

**XI. Nature of Business (provide a brief description that includes both dangerous waste and non-dangerous waste areas and activities)**

Construction of the Liquid Effluent Retention Facility (LERF) began in 1990, and waste management operations began in April 1994. Construction of the 200 Area ETF began in 1992, and waste management operations began in November of 1995. The LERF and 200 Area ETF comprise an aqueous waste (dilute wastewaters) treatment system located in the 200 East Area that provides storage and treatment for a variety of aqueous mixed waste.

The aqueous waste streams are contaminated with radionuclides, heavy metals, and/or organic constituents. For example, the process condensate from the 242-A Evaporator is a treatment residue; and the primary chemicals that carry over from dewatering process are ammonia and acetone. Leachate from mixed waste landfills is composed of storm water that has leached through a Subtitle C landfill, and could contain a small amount of radionuclides and chemical constituents leached from land disposal restrictions (LDR) compliant wastes. Purgewater is composed of >99% groundwater that may be contaminated with radionuclides and dangerous waste from past-practice spills or releases. This aqueous waste includes process condensate from the 242-A Evaporator and other aqueous waste generated from onsite remediation and waste management activities. As such, Section XIV contains the same waste numbers as the 242-A Evaporator.

**S04 and T02 - Surface Impoundment Storage and Treatment**

Three lined surface impoundments (LERF Basins 42, 43, and 44) are used to store and treat aqueous waste. Aqueous waste in LERF is treated by pH and flow equalization. Operations of the LERF basins qualified for the surface impoundment treatment exemption from the LDR in accordance with [40 CFR 268.4](#), incorporated by reference by [WAC 173-303-140 \(reference Addendum B, Waste Analysis Plan\)](#). The aqueous waste from LERF is pumped to the 200 Area ETF for treatment in a series of process units, or systems, that remove or destroy dangerous waste constituents. The treated effluent is discharged to a State-Approved Land Disposal Site north of the 200 West Area, under the authority of a Washington State Waste Discharge Permit (ST0004500) and the 200 Area Final Delisting ([40 CFR 261](#), [Appendix IX](#), Table 2).

**S01 and T04 - Container Storage and Treatment**

Five container storage and treatment DWMUs are located at the 200 Area ETF. Containers in these areas can be moved between DWMUs. The primary treatment in containers is decanting and the use of absorbents to stabilize free liquids in sludge drained from treatment tanks. Once containers are full, the containers are moved to the 2025E Container Storage Area, the Outside Container Storage Area, sent to another TSD facility, or Environmental Restoration Disposal Facility (ERDF), as appropriate. The container design capacity 39,000 gallons is an empirical number based on the equivalent of storing 709, 55-gallon drums within the five-container storage areas. The treatment capacity 5,000 gallons is an empirical number based on maximum anticipated treatment. The five container storage and treatment areas are:

**XI. Nature of Business (provide a brief description that includes both dangerous waste and non-dangerous waste areas and activities)**

- 2025E Process Area. The waste primarily consists of containers that function as part of the waste management process. Waste streams are accumulated into DOT approved containers near a specific operation within the 2025E Process Area. The containers primarily store waste generated from maintenance and operations activities. Treatment activities include decanting and the use of absorbents for liquid stabilization. Another function of the waste management process is to store aqueous waste containers from other Hanford Site sources in the 2025E Process Area and transfer the waste to the 200 Area ETF tanks for processing. Once the Process Area containers are full, the containers are moved to the 2025E Container Storage Area, the Outside Container Storage Area, another TSD facility, or ERDF.
- 2025E Container Storage Area. The containerized waste primarily consists of brine and dry powder treatment residues, aqueous wastes received for treatment, and waste generated from maintenance and operations activities. Treatment activities in this area include decanting and the use of absorbents for liquid stabilization.
- 2025E Truck Bay. This area is used to store containers being moved between the 2025E Process Area, 2025E Container Storage Area, and Outside Container Storage Area. The containerized waste primarily consists of brine and dry powder treatment residues, aqueous wastes received for treatment, and waste generated from maintenance and operations activities. Treatment activities in this area include decanting and the use of absorbents for liquid stabilization. However, container storage and treatment is limited because of the limited space available in the 2025E Truck Bay.
- Outside Container Storage Area. The containerized waste primarily consists of brine and dry powder treatment residues, and waste generated from maintenance and operations activities. Treatment activities in this area include the use of absorbents for liquid stabilization.
- 2025ED Load-In Station. This area is primarily used to store waste generated from maintenance and operations activities, aqueous waste in tanker trucks and other containers (such as drums, or totes) until the waste is transferred into the Load-In Station tank, surge tank, or directly to LERF. Treatment activities in this area include decanting and the use of absorbents for liquid stabilization.

**S02 and T01 – Tank Storage and Treatment**

The list provided below identifies the tank storage and treatment DWMUs identified in Section XII.C. Aqueous waste is treated and stored in the 2025E Process Area in a series of tank systems. Additionally, three tanks are associated with the 2025ED Load-In Station. The structural design capacity is based on the tank dimensions. Addendum C, Section C.4 contains additional information on the following tanks.

1. 20B-TK-1, Sump Tank 1
2. 20B-TK-2, Sump Tank 2
3. 59A-TK-1, Load-In Station Tank
4. 59A-TK-2, Sump Tank
5. 59A-TK-3, Filter Drain Sump Tank
6. 59A-TK-109, Load-In Station Tank (physically isolated from service; refer to Addendum H, Closure Plan)
7. 59A-TK-117, Load-In Station Tank (physically isolated from service; refer to Addendum H, Closure Plan)
8. 60A-TK-1, Surge Tank
9. 60C-TK-1, pH Adjust Tank
10. 60C-TK-2, Effluent pH Adjust Tank
11. 60F-TK-1, 1st RO Feed Tank
12. 60F-TK-2, 2nd RO Feed Tank
13. 60H-TK-1A, Verification Tank
14. 60H-TK-1B, Verification Tank
15. 60H-TK-1C, Verification Tank
16. 60I-EV-1, Evaporator Vapor Body Vessel
17. 60I-TK-1A, Secondary Waste Receiving Tank
18. 60I-TK-1B, Secondary Waste Receiving Tank
19. 60I-TK-2, Distillate Flash Tank
20. 60J-TK-1A, Concentrate Tank
21. 60J-TK-1B, Concentrate Tank

**NAICS Codes**

NAICS Codes listed in Section IX.B – IX.D apply to the Hanford Facility and not to this unit.

**EXAMPLE FOR COMPLETING ITEMS XII and XIII (shown in lines numbered X-1, X-2, and X-3 below):** A facility has two storage tanks that hold 1200 gallons and 400 gallons respectively. There is also treatment in tanks at 20 gallons/hr. Finally, a one-quarter acre area that is two meters deep will undergo in situ *vitrification*.

Section XII. Process Codes and Design Capacities							Section XIII. Other Process Codes							
Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	D. Process Description
	1.	2.	3.	1. Amount	2. Unit of Measure (enter code)			1.	2.	3.	1. Amount	2. Unit of Measure (enter code)		
X 1	S	0	2	1,600	G	002	X 1	T	0	4	700	C	001	In situ vitrification
X 2	T	0	3	20	E	001								
X 3	T	0	4	700	C	001								
1	S	0	4	23,400,000	G	003	1	T	0	4	5,000	U	005	container treatment
2	T	0	2	23,400,000	U	003	2							
3	S	0	2	2,630,000	G	21	3							
4	T	0	1	216,000	U	21	4							
5	S	0	1	39,000	G	005	5							
6	T	0	4	5,000	U	005	6							
7							7							
8							8							
9							9							
1 0							1 0							
1 1							1 1							
1 2							1 2							
1 3							1 3							
1 4							1 4							
1 5							1 5							
1 6							1 6							
1 7							1 7							
1 8							1 8							
1 9							1 9							
2 0							2 0							
2 1							2 1							
2 2							2 2							
2 3							2 3							
2 4							2 4							
2 5							2 5							

**XIV. Description of Dangerous Wastes**

**Example for completing this section:** A facility will receive three non-listed wastes, then store and treat them on-site. Two wastes are corrosive only, with the facility receiving and storing the wastes in containers. There will be about 200 pounds per year of each of these two wastes, which will be neutralized in a tank. The other waste is corrosive and ignitable and will be neutralized then blended into hazardous waste fuel. There will be about 100 pounds per year of that waste, which will be received in bulk and put into tanks.

Line Number	A. Dangerous Waste No.				B. Estimated Annual Quantity of Waste	C. Unit of Measure	D. Processes											
	(1) Process Codes								(2) Process Description [[If a code is not entered in D (1)]]									
X 1	D	0	0	2	400	P	S	0	1	T	0	1						
X 2	D	0	0	1	100	P	S	0	2	T	0	1						
X 3	D	0	0	2														<b>Included with above</b>
1	D	0	0	1	337,000,000	P	S	0	4	T	0	2						Surface Impoundment Storage & Treatment
2	D	0	0	2														Included with above
3	D	0	0	3														Included with above
4	D	0	0	4														Included with above
5	D	0	0	5														Included with above
6	D	0	0	6														Included with above
7	D	0	0	7														Included with above
8	D	0	0	8														Included with above
9	D	0	0	9														Included with above
10	D	0	1	0														Included with above
11	D	0	1	1														Included with above
12	D	0	1	8														Included with above
13	D	0	1	9														Included with above
14	D	0	2	2														Included with above
15	D	0	2	8														Included with above
16	D	0	2	9														Included with above
17	D	0	3	0														Included with above
18	D	0	3	3														Included with above
19	D	0	3	4														Included with above
20	D	0	3	5														Included with above
21	D	0	3	6														Included with above
22	D	0	3	8														Included with above
23	D	0	3	9														Included with above
24	D	0	4	0														Included with above
25	D	0	4	1														Included with above



<b>EPA/State ID Number</b>	<b>W</b>	<b>A</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>7</b>
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**Continuation of Section XIV. Description of Dangerous Waste**

Line Number	A. Dangerous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Process											
							(1) Process Codes (enter)					(2) Process Description [If a code is not entered in D (1)]						
57	D	0	3	8														Included with above
58	D	0	3	9														Included with above
59	D	0	4	0														Included with above
60	D	0	4	1														Included with above
61	D	0	4	3														Included with above
62	F	0	0	1														Included with above
63	F	0	0	2														Included with above
64	F	0	0	3														Included with above
65	F	0	0	4														Included with above
66	F	0	0	5														Included with above
67	F	0	3	9														Included with above
68	W	T	0	1														Included with above
69	W	T	0	2														Included with above
70	U	2	1	0														Included with above
71	D	0	0	1	340,000	P	S	0	1									Container Storage Includes Debris
72	D	0	0	2														Included with above
73	D	0	0	3														Included with above
74	D	0	0	4														Included with above
75	D	0	0	5														Included with above
76	D	0	0	6														Included with above
77	D	0	0	7														Included with above
78	D	0	0	8														Included with above
79	D	0	0	9														Included with above
80	D	0	1	0														Included with above
81	D	0	1	1														Included with above
82	D	0	1	8														Included with above
83	D	0	1	9														Included with above
84	D	0	2	2														Included with above
85	D	0	2	8														Included with above
86	D	0	2	9														Included with above
87	D	0	3	0														Included with above

<b>EPA/State ID Number</b>	<b>W</b>	<b>A</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>9</b>	<b>6</b>	<b>7</b>
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**Continuation of Section XIV. Description of Dangerous Waste**

Line Number	A. Dangerous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Process											
							(1) Process Codes (enter)					(2) Process Description [If a code is not entered in D (1)]						
88	D	0	3	3														Included with above
89	D	0	3	4														Included with above
90	D	0	3	5														Included with above
91	D	0	3	6														Included with above
92	D	0	3	8														Included with above
93	D	0	3	9														Included with above
94	D	0	4	0														Included with above
95	D	0	4	1														Included with above
96	D	0	4	3														Included with above
97	F	0	0	1														Included with above
98	F	0	0	2														Included with above
99	F	0	0	3														Included with above
100	F	0	0	4														Included with above
101	F	0	0	5														Included with above
102	F	0	3	9														Included with above
103	W	T	0	1														Included with above
104	W	T	0	2														Included with above
105	U	2	1	0														Included with above
106	D	0	0	1	179,000	P	T	0	4									Container Treatment Includes Debris
107	D	0	0	2														Included with above
108	D	0	0	3														Included with above
109	D	0	0	4														Included with above
110	D	0	0	5														Included with above
111	D	0	0	6														Included with above
112	D	0	0	7														Included with above
113	D	0	0	8														Included with above
114	D	0	0	9														Included with above
115	D	0	1	0														Included with above
116	D	0	1	1														Included with above
117	D	0	1	8														Included with above
118	D	0	1	9														Included with above

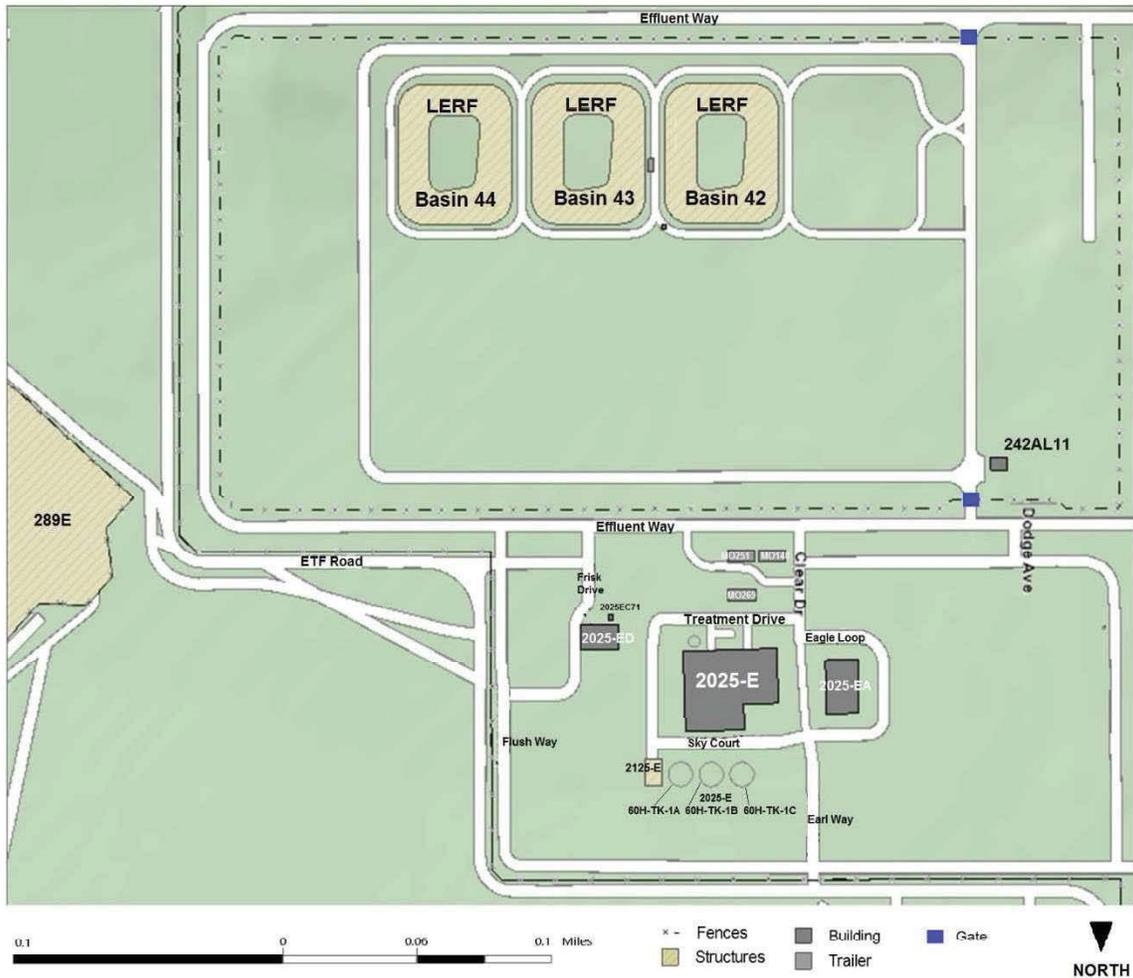


<p><b>XV. Map</b></p> <p>Attach to this application a topographic map of the area extending to at least one (1) mile beyond property boundaries. The map must show the outline of the facility; the location of each of its existing and proposed intake and discharge structures; each of its dangerous waste treatment, storage, recycling, or disposal units; and each well where fluids are injected underground. Include all springs, rivers, and other surface water bodies in this map area, plus drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary. The instructions provide additional information on meeting these requirements.</p>		
<p><b>XVI. Facility Drawing</b></p> <p>All existing facilities must include a scale drawing of the facility (refer to Instructions for more detail).</p>		
<p><b>XVII. Photographs</b></p> <p>All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, recycling, and disposal areas; and sites of future storage, treatment, recycling, or disposal areas (refer to Instructions for more detail).</p>		
<p><b>XVIII. Certifications</b></p> <p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p>		
<p><b>Operator</b> Name and Official Title (type or print) Brian T. Vance, Manager U.S. Department of Energy Office of River Protection</p>	<p><b>Signature</b></p>  <p>Digitally signed by Brian T. Vance DN: cn=Brian T. Vance, o=Office of River Protection, ou=Department of Energy, email=brian.t.vance@orp.doe.gov, c=US Date: 2020.11.02 14:13:31 -08'00'</p>	<p><b>Date Signed</b></p>
<p><b>Co-Operator</b> Name and Official Title (type or print) John R. Eschenberg President and Project Manager Washington River Protection Solutions, LLC</p>	<p><b>Signature</b></p> 	<p><b>Date Signed</b></p> <p>10/28/20</p>
<p><b>Co-Operator – Address and Telephone Number</b> P.O. Box 850 Richland, WA 99352 (509) 376-2574</p>		
<p><b>Facility-Property Owner</b> Name and Official Title (type or print) Brian T. Vance, Manager U.S. Department of Energy Office of River Protection</p>	<p><b>Signature</b></p>  <p>Digitally signed by Brian T. Vance DN: cn=Brian T. Vance, o=Office of River Protection, ou=Department of Energy, email=brian.t.vance@orp.doe.gov, c=US Date: 2020.11.02 14:14:03 -08'00'</p>	<p><b>Date Signed</b></p>

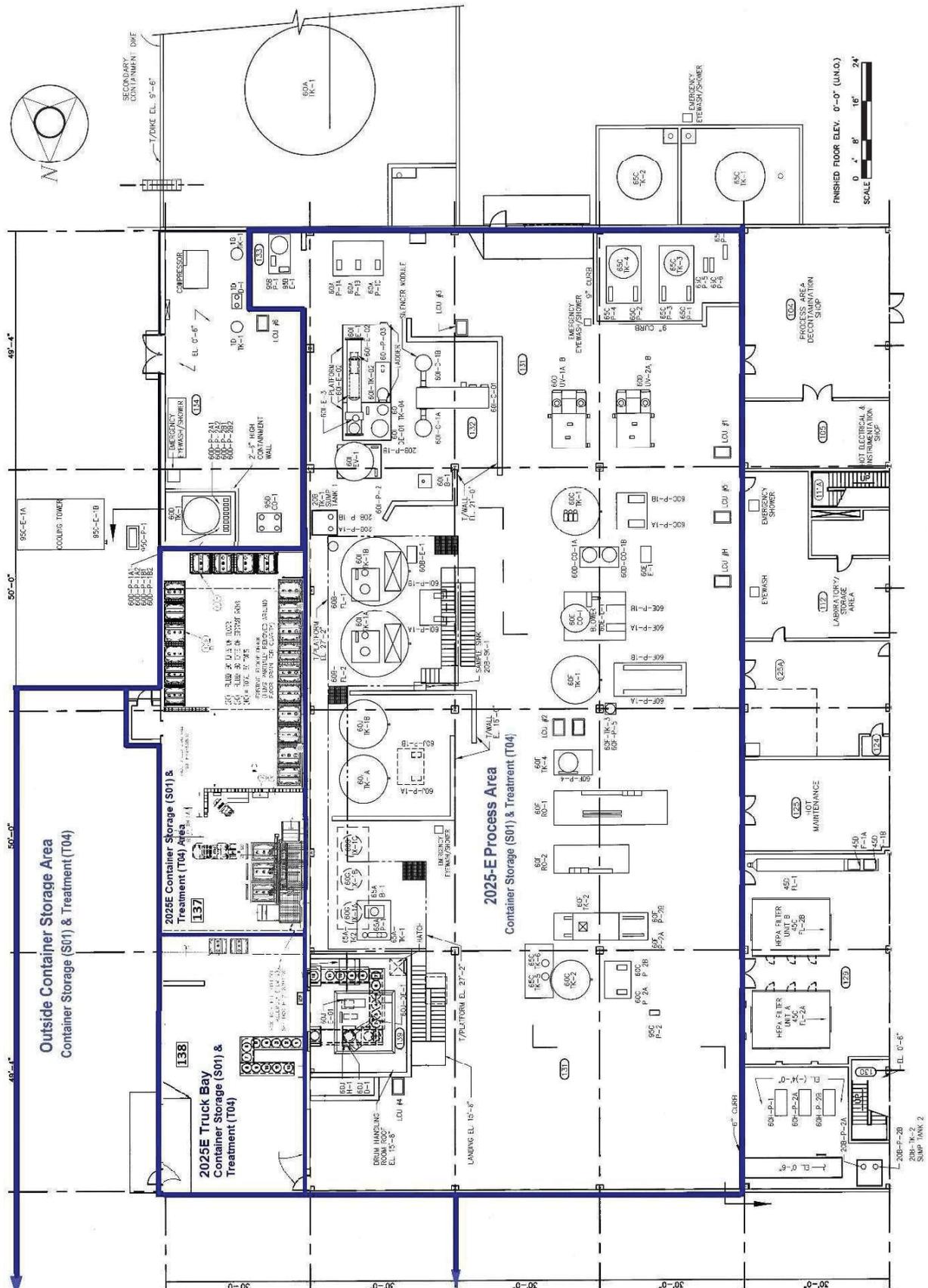
**Comments**



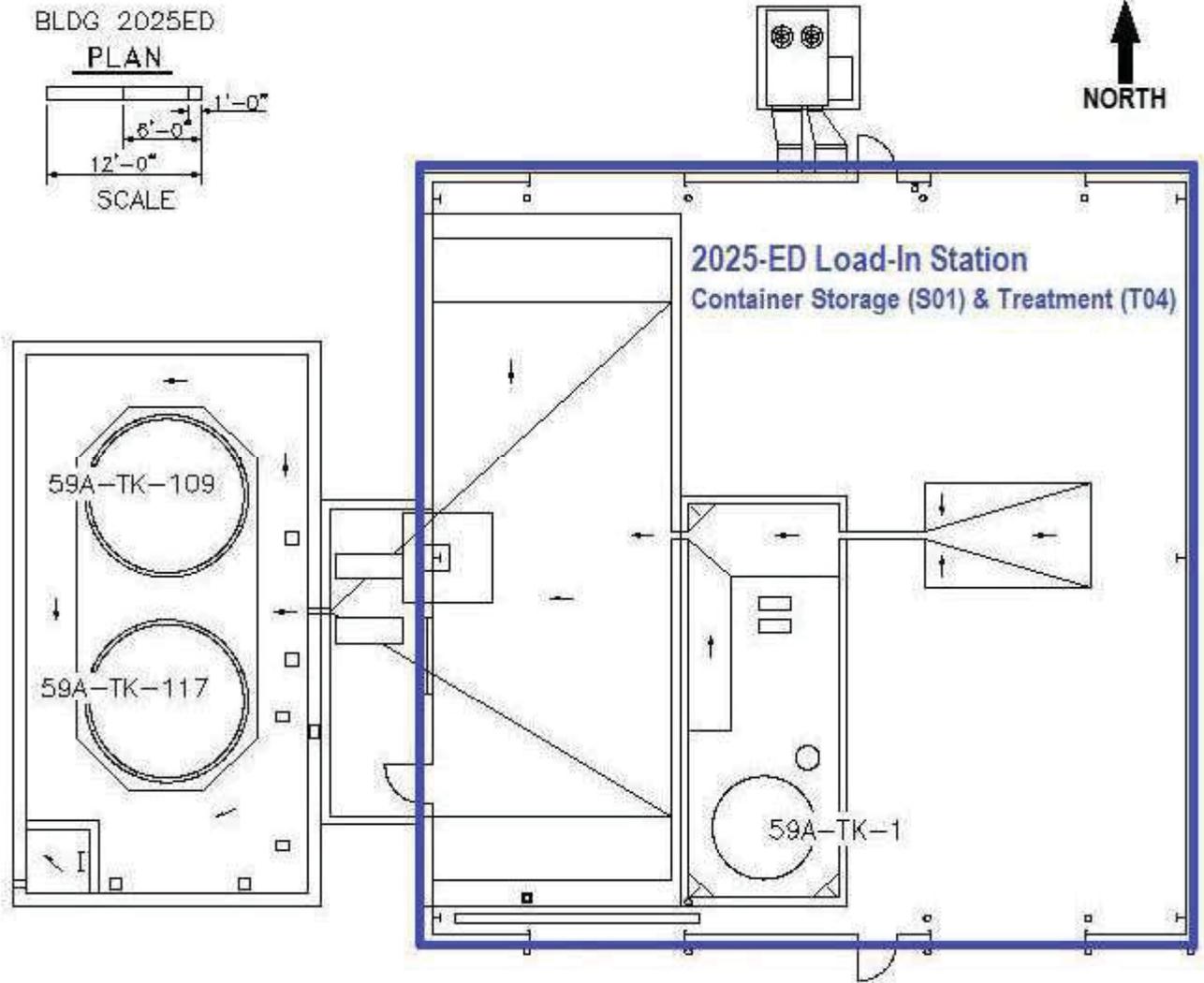
Photo 2/2010



A.1. LERF and 200 Area ETF



A.2. 2025-E ETF Ground Floor Plan



A.3. 2025-ED Load-In Station



A.4. 200 Area ETF Building 2025-E

Photo 9/2016



A.5. 2025-E Process Area

Photo 3/2016



A.6. 2025-E Container Storage Area Photo 9/2016



A.7. 2025-E Process Area Photo 3/2016



A.8. 2025-E Truck Bay Photo 3/2016



A.9. 2025-E Process Area Photo 3/2016



A.10. 2025-E Process Area Primary Train Photo 3/2016



A.11. Outside Container Storage Area Photo 3/2016



A.12. 2025-ED Load-In Station

Photo 3/2016



A.13. 2025-ED Load-In Station  
59A-TK-1 and Tanker Truck

Photo 3/2016



A.14. 20B-TK-1, Sump Tank 1

Photo 2/2017



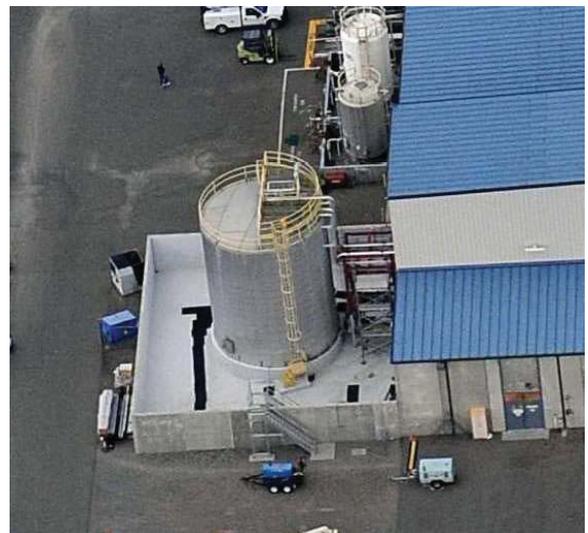
A.15. 20B-TK-2, Sump Tank 2

Photo 2/2017



A.16. 59A-TK-109 and 59A-TK-117  
2025-ED Load-In Station Tanks (permanently isolated)

Photo 8/2016



A.17. 60A-TK-1, Surge Tank

Photo 1/2017



A.18. pH Adjustment Tank 60C-TK-1 Photo 1/2017



A.19. Effluent pH Adjustment Tank 60C-TK-2 Photo 1/2017



A.20. 1st RO Feed Tank 60F-TK-1 Photo 1/2017



A.21. 2nd RO Feed Tank 60F-TK-2 Photo 1/2017



A.22. 60H-TK-1A/1B/1C, Verification Tanks Photo 9/2016



A.23. 60I-EV-1  
Evaporator Vapor Body Vessel Photo 9/2016



A.24. 60I-TK-1A  
Secondary Waste Receiving Tank Photo 2/2017



A.25. 60I-TK-1B  
Secondary Waste Receiving Tank  
Photo 2/2017



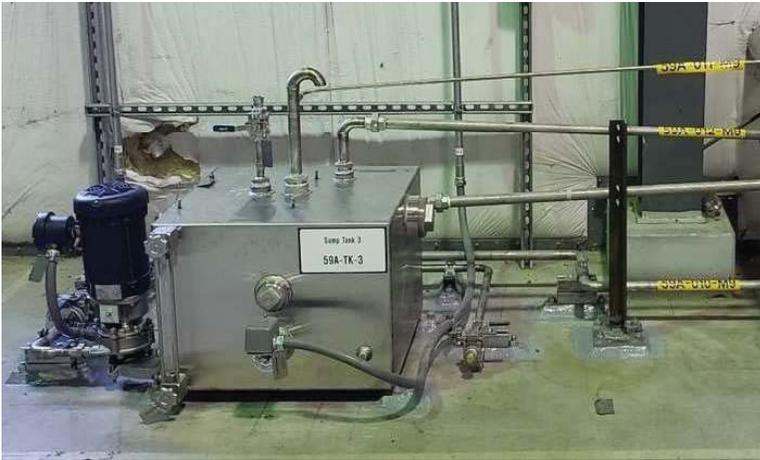
A.26. 60I-TK-2 Distillate Flash Tank  
Photo 2/2017



A.28. 59A-TK-2 Sump Tank  
Photo 1/2019

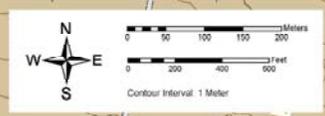
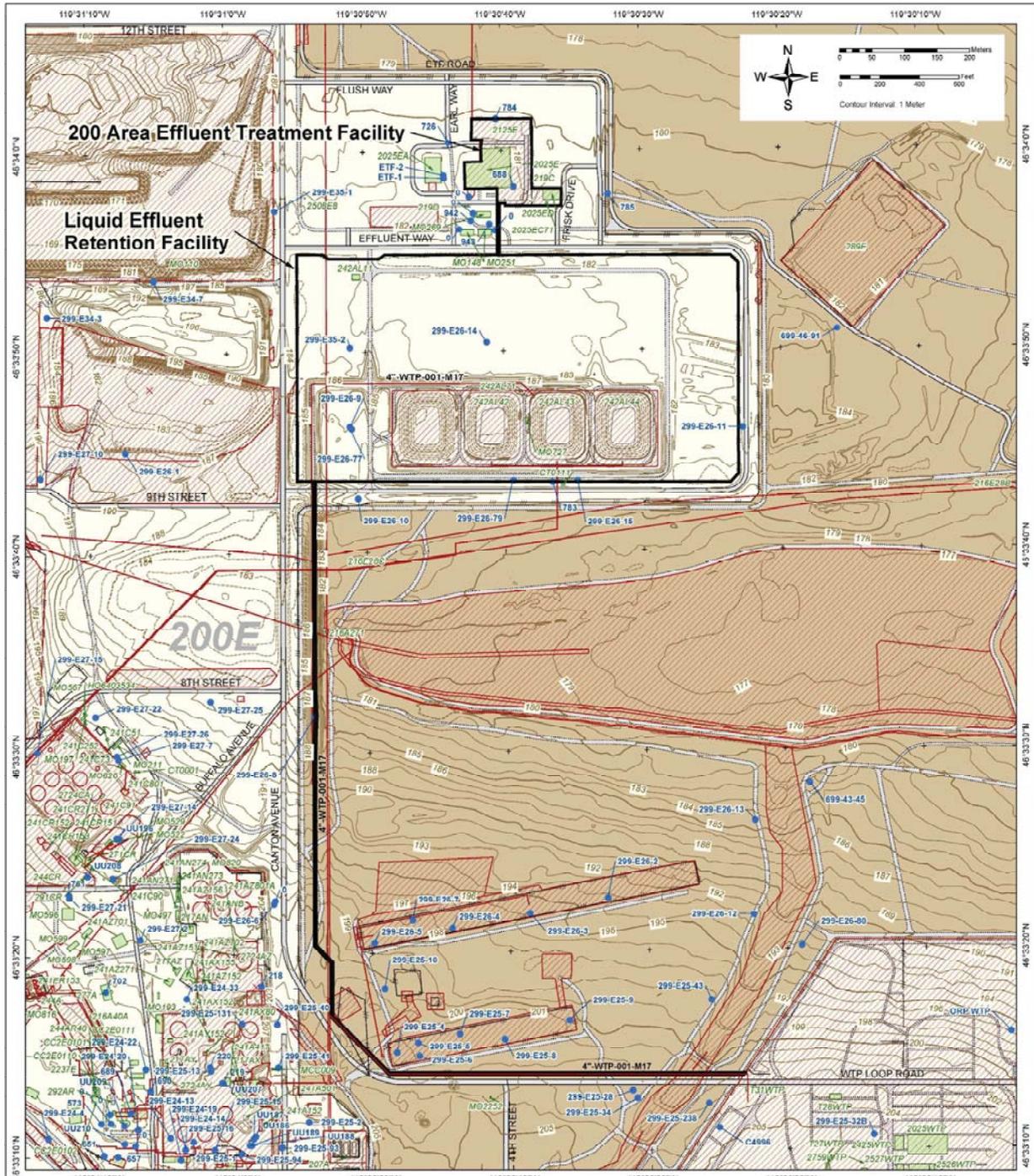


A.27. 60J-TK-1A/1B, Concentrate Tanks  
Photo 2/2017



A.29. 59A-TK-3 Filter Drain Sump Tank

Photo 10/2020



**The Hanford Site**



Area Shown on Map

**Operating Unit  
Group 3,  
Liquid Effluent Retention  
Facility &  
200 Area Effluent  
Treatment Facility**

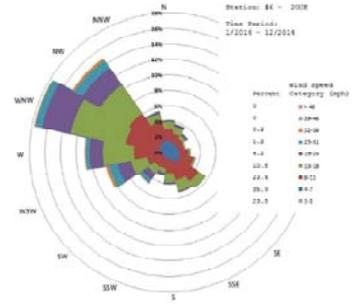
- TSD Unit Group Boundary
- Contours at 1 Meter Intervals
- Depression Contours at 1 Meter Intervals
- Wells
- DOE Operating Areas
- Hanford Facility
- SWMUs and Known Releases
- Linear SWMUs and Known Releases
- Spot SWMUs and Known Releases
- Buildings & Mobiles
- Structures
- Major Roads
- Service Roads
- Railroads
- Fences

Prepared for:  
US DEPARTMENT OF ENERGY  
RICHLAND OPERATIONS OFFICE

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Prepared For the U.S. Department of Energy, Assistant Secretary for Environmental Management By Washington River Protection Solutions, LLC., PO Box 850, Richland, WA 99352 Contractor For U.S. Department of Energy, Office of River Protection, under Contract DE-AC27-08RV14800 TRADEMARK DISCLAIMER: Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or any agency thereof or its contractors or subcontractors. Printed in the United States of America.				<div style="border: 2px solid red; padding: 10px; display: inline-block;"> <p style="color: red; font-weight: bold; font-size: 1.2em;">DATE:</p> <p style="color: red; font-weight: bold; font-size: 1.5em;">Oct 22, 2020</p>  </div>	
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2. <b>Title:</b> Independent Qualified Registered Professional Engineer Design Assessment for ETF Load-In Filter Drain System					
3. <b>Project Number:</b> T1P208 <input type="checkbox"/> N/A		4. <b>Design Verification Required:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
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Document Control Approval		Meinecke, Kathryn R		Meinecke, Kathryn R	
Environmental Protection		Wall, Jeremy M		Wall, Jeremy M	
Originator		Young, Natalie M		Young, Natalie M	
Responsible Manager		Lehrman, Scott D		Lehrman, Scott D	
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Updated to reflect as installed design.					
<b>9. TBDs or Holds</b> <span style="float: right;"><input checked="" type="checkbox"/> N/A</span>					
<b>10. Related Structures, Systems, and Components</b>					
<b>a. Related Building/Facilities</b> <input type="checkbox"/> N/A		<b>b. Related Systems</b> <input type="checkbox"/> N/A		<b>c. Related Equipment ID Nos. (EIN)</b> <input type="checkbox"/> N/A	
2025ED ETF FACILITIES		ETF-59A		59A-FL-001 59A-FL-002 59A-FL-003 59A-P-3 59A-TK-3	
<b>11. Impacted Documents – Engineering</b> <span style="float: right;"><input checked="" type="checkbox"/> N/A</span>					
<b>Document Number</b>		<b>Rev.</b>	<b>Title</b>		
<b>12. Impacted Documents (Outside SPF):</b>					
N/A					
<b>13. Related Documents</b> <span style="float: right;"><input type="checkbox"/> N/A</span>					
<b>Document Number</b>		<b>Rev.</b>	<b>Title</b>		
ECN-714608		01	ETF Load-In Filter Drain P&ID ECN		
ECN-714609		02	ETF Load-In Filter Drain Mechanical ECN		
H-2-817974 SH 001		20	P&ID ETF TRUCK LOAD-IN STATION		
H-2-817974 SH 002		04	P&ID ETF TRUCK LOAD-IN STATION		
H-2-817975 SH 001		12	PIPING ETF TRUCK LOAD-IN & PURGEWATER UNLOADING STATION PLAN		
H-2-817976 SH 001		04	PIPING ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS		
H-2-817976 SH 002		01	PIPING ETF TRK LOAD-IN & PURGEWATER UNLOADING STATION SECT AND DET		
H-2-817976 SH 003		01	PIPING ETF TRK LOAD-IN & PURGEWATER UNL STATION SECT & DET		
H-2-817976 SH 004		00	PIPING PURGEWATER UNLOADING STATION DETAILS		
H-2-817976 SH 005		00	PIPING PURGEWATER UNLOADING STATION SUPPORTS		
H-2-817976 SH 006		00	PIPING ETF TRUCK LOAD-IN & PURGEWATER UNLOADING STATION SECTIONS		
H-9-6113 SH 001		00	PIPING ETF LOAD-IN FACILITY FILTER DRAIN SUMP TANK		
HNF-27957		04	200 Area ETF, Load-In, and LERF Pipe Class Specification		
MT-50409		01	ETF Load-In Filter Drain Modification		
RPP-CALC-62734		00	ETF Load-In, Filter Drain System Pipe Stress Analysis		
RPP-CALC-62877		00	ETF Load-In Filter Drain Modification: Filter Drain Sump Tank Anchorage Analysis		
RPP-IQRPE-50043		00	FY19 Effluent Treatment Facility IQRPE Integrity Assessment		
RPP-IQRPE-50049		00	ETF Load-In Filter Drain System IQRPE Inspection Plan		
RPP-IQRPE-50051		00	Independent Qualified Registered Professional Engineer Installation Assessment Report for ETF Load-In Filter Drain System		
RPP-PLAN-60845		01	Effluent Treatment Facility Basin 43 2016 Campaign Process Control Plan		

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<b>Name</b>	<b>Organization</b>
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Rutherford, Wally	PROD OPERATIONS ENGINEERING
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Wall, Jeremy M	RETRVL & CLOSURE/PROJ ENV CMPL

<b>Checking of Engineering Documents</b>	<b>Manual Document Page Issue Date</b>	<b>Engineering Document TFC-ENG-DESIGN-P-54, REV A-11 8 of 17 January 14, 2020</b>
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**Figure 1. Technical Report Checklist.**

Report Number RPP-IQRPE-50050 Revision: 01

Report Title: Independent Qualified Registered Professional Engineer Design Assessment for ETF Load-In Filter Drain System

The following checklist is used by checkers to ensure technical reports are complete and in compliance with engineering procedures (i.e., TFC-ENG-DESIGN-C-25). This checklist is also applicable to ECNs that revise these types of documents. DRCF required approvers vary according to the type of document being released. Required approvers are identified in SPF.

Item No.	Yes	No	N/A	Item
				<b>Version/Format</b>
1	X			If revising an existing report, are the changes being made against the current revision in SPF?
2	X			Is the Document Release and Change Form (DRCF) properly filled out?
3	X			Are all of the pages properly labeled with Report Number, Revision Number, and Sequential Page Number?
4			X	Are the Subject and Purpose clearly stated and do they meet the end users' needs?
				<b>References</b>
5			X	Are all References properly documented within the report and can they be easily verified within Document Control, online, or within the library, etc.? If reference documents are not readily available, are they attached?
6			X	Have the correct design bases documents been identified (e.g., codes, standards, DOE Orders, TOC standards, regulatory requirements, etc.)?
				<b>Open Items/Input</b>
7			X	Is there a reference/source for each input?
8			X	Do the identified references/sources fully support the inputs?
9			X	Are all assumptions used to support the report individually listed and numbered?
10			X	Is there a justification written for each assumption that includes a technical basis?
11			X	Do the justifications adequately support the assumptions?
12			X	If the report has open items, TBDs, and/or HOLDS, is there a method identified to track them?
				<b>Results/Conclusion</b>
13			X	Are the results of the report consistent with the input and assumptions?
14			X	Do the results of the report affect any other technical documents?
15			X	Do the results substantiate the conclusion?
				<b>Approvals</b>
16	X			Does the DRCF identify the method of verification and checking and does it have a signature block for the verifier/checker?

Item No.	Comments
4 – 15	This document releases a copy of an IQRPE report. The IQRPE is responsible for items 4-15.

Checker: Rose Russell Rose Russell 10/15/2020  
 Print Name Signature Date

**RPP-IQRPE-50050**  
**Revision 1**

# **Independent Qualified Registered Professional Engineer Design Assessment Report for ETF Load-In Filter Drain System**

**Prepared by**

**N. M. Young**  
Washington River Protection Solutions, LLC

Date Published  
October 2020



Prepared for the U.S. Department of Energy  
Office of River Protection

Contract No. DE-AC27-08RV14800

**Independent Qualified Registered Professional Engineer  
Design Assessment Report  
For  
ETF Load-In Filter Drain System**

**IQRPE Design Assessment Report  
No. DA-318173-01  
Rev. 1**

Prepared By



12 W. Kennewick Ave.  
Kennewick, WA 99336

At the request of



Richland, Washington 99352

Meier Project No. 19-8463  
WRPS Subcontract No. 64658, Release 019

October 8, 2020

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## 1.0 INTRODUCTION

The Washington Administrative Code (WAC) 173-303-640(3), *Tank Systems*, provide a set of requirements for Owner/Operators of dangerous waste tank systems. This Design Assessment Report is prepared for Washington River Protection Solutions, LLC (WRPS), to meet the Washington Department of Ecology (Ecology) review, by an Independent Qualified Registered Professional Engineer (IQRPE) to certify that the proposed tank system will have sufficient structural integrity and is acceptable for storing and treating dangerous waste per WAC 173-303-640(3)(a).

IP-318173-01, *Independent Qualified Registered Professional Engineer Inspection Plan for ETF Load-In Filter Drain System*, identifies the IQRPE inspections required for the procurement and testing related to the Effluent Treatment Facility (ETF) Load-In Filter Drain System. (There were no fabrication activities associated with IP-318173-01 because all components were procured ready to be installed.)

IA-318173-01, *Independent Qualified Registered Professional Engineer Installation Assessment Report for ETF Load-In Filter Drain System*, was prepared for WRPS by an IQRPE to certify that the tank system installations are in accordance with WAC 173-303-640(3)(c)-(g).

The IQRPE maintains “independence” at all times. However, comments and suggestions by others are considered by the IQRPE during the preparation of reports and plans. Only the IQRPE can implement changes to the master IQRPE documents.

### 1.1 PROJECT DESCRIPTION

#### 1.1.1 Background

The ETF receives a portion of its waste feed stream via tanker trucks. Waste feed is pumped out of the tankers and through three (3) particulate filters. The waste feed is then pumped to the surge tank, or Liquid Effluent Retention Facility (LERF).

The three (3) load-in filters are not back-flushable and the elements require periodical replacement. In order to replace the filter elements, the filter housings are drained. Currently, the filter housings are drained into the existing secondary containment sump located outside of the truck load-in building. The filter housing contents are then pumped out of the sump using an existing pump.

The new Load-In Filter Drain System will have a small sump tank with a pump (approximately 45 gallons) installed adjacent to the load-in filters. The filter housings will be drained into the sump tank. At the completion of filter maintenance, the contents of the sump tank will be pumped back into the filter housings. The new sump tank will normally be empty. The sump tank will be equipped with a sight glass to indicate level. The sump tank will have an overflow that routes to the existing secondary containment sump. The pump will be manually operated via a local control panel.

The primary scope of this IQRPE design assessment will include the design and installation of a 45-gallon water sump tank, pump, and associated piping in the ETF Load-In Facility. This new system will temporarily store liquid while the load-in filters are being serviced.

This activity constitutes a design modification to an existing facility. In accordance with WAC-173-303-640(3)(a), modification of an existing facility requires that the IQRPE attest that the

modifications will not impact the structural integrity of the component and is acceptable for handling dangerous waste.

### 1.1.2 IQRPE Scope

Meier Architecture • Engineering (Meier) is the IQRPE of record for the IQRPE Support for the ETF Load-In Filter Drain System Project. Meier will provide IQRPEs and Independent Qualified Installation Inspectors (IQIIs) to review the design, fabrication, and installation activities involving the ETF Load-In Filter Drain System Project per WRPS Statement of Work (SOW) No. 318173, *IQRPE Support to ETF Load-In Filter Drain System (BMA 64658)*.

A review of design documents (drawings, calculations, piping specifications, Engineering Change Notice [ECN], etc.) was completed by the IQRPE. Included within the scope of the IQRPE review are various technical evaluations covering areas dealing with potential waste leak paths, thermal expansion, water hammer, and freeze protection issues associated with the ETF Load-In Filter Drain System Project.

The IQRPE performed the design assessment to the requirements of WAC 173-303-640(3), *Design and Installation of New Tank Systems or Components*. The scope of the IQRPE assessment will include the installation of the new piping and equipment procured and installed to support the ETF Load-In Filter Drain System Project:

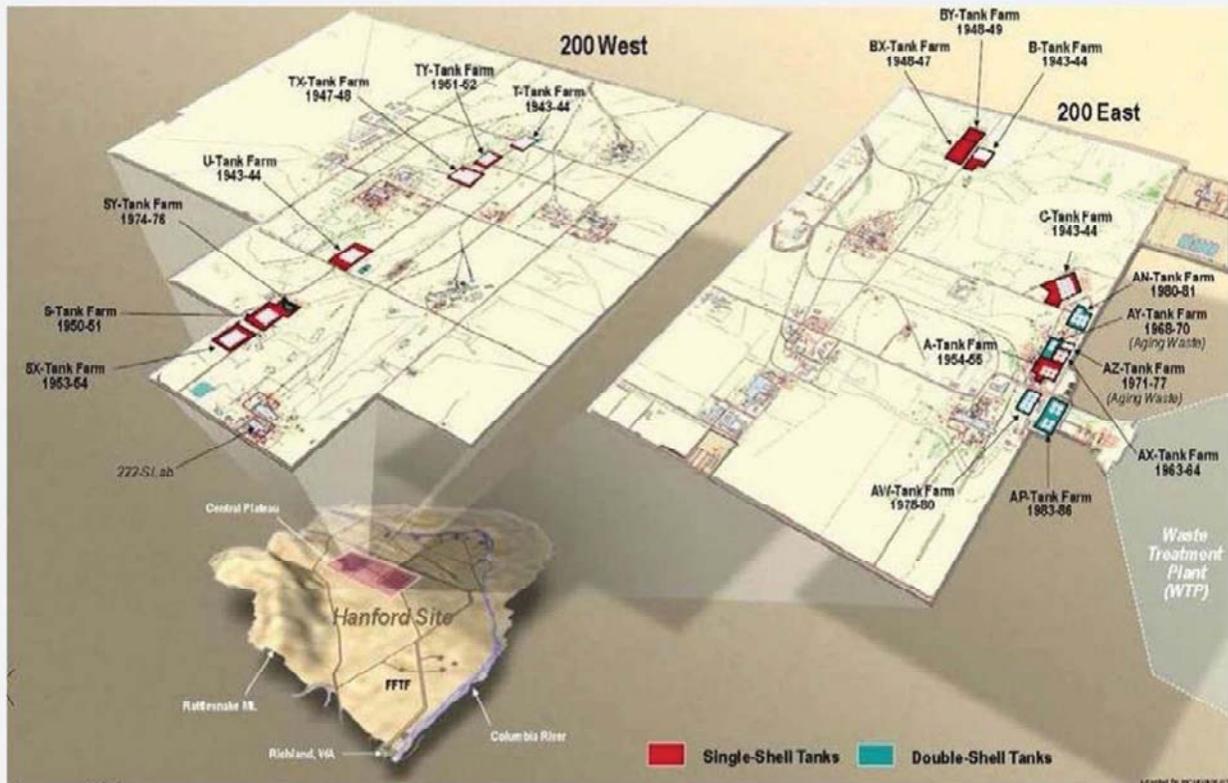
- 45 Gallon Sump Tank: 59A-TK-3
- 15 GPM Pump Assembly: 59A-P-3
- Piping Assemblies: 1"-59A-007-M9, 1"-59A-010-M9, and 1"-59A-012-M9
- Tubing Assembly: ½"-59A-011-M9

The overall details of the design change are documented in Modification Traveler MT-50409, *ETF Load-In Filter Drain Modification*; ECN-714608, *ETF Load-In Filter Drain P&ID ECN* and ECN-714609, *ETF Load-In Filter Drain Mechanical ECN*. Relevant codes and standards include ASME B31.3-2016, *Process Piping* and HNF-27957, *200 Area ETF, Load-In, and LERF Pipe Class Specification*.

This IQRPE design assessment takes credit for a previously issued IQRPE Integrity Assessment Report for the ETF detailed in RPP-IQRPE-50043, *FY19 Effluent Treatment Facility IQRPE Integrity Assessment*.

The ETF Load-In Filter Drain System Project task will occur in the ETF Load-In Facility, Building 2025ED, located at the ETF on the Hanford Nuclear Waste Site in the 200 East Area.

The following figures show the general layout of the project location, infrastructure, equipment layout, and other pertinent details:



**Figure 1: Hanford Map Showing the Location of the 200 East and West Areas**

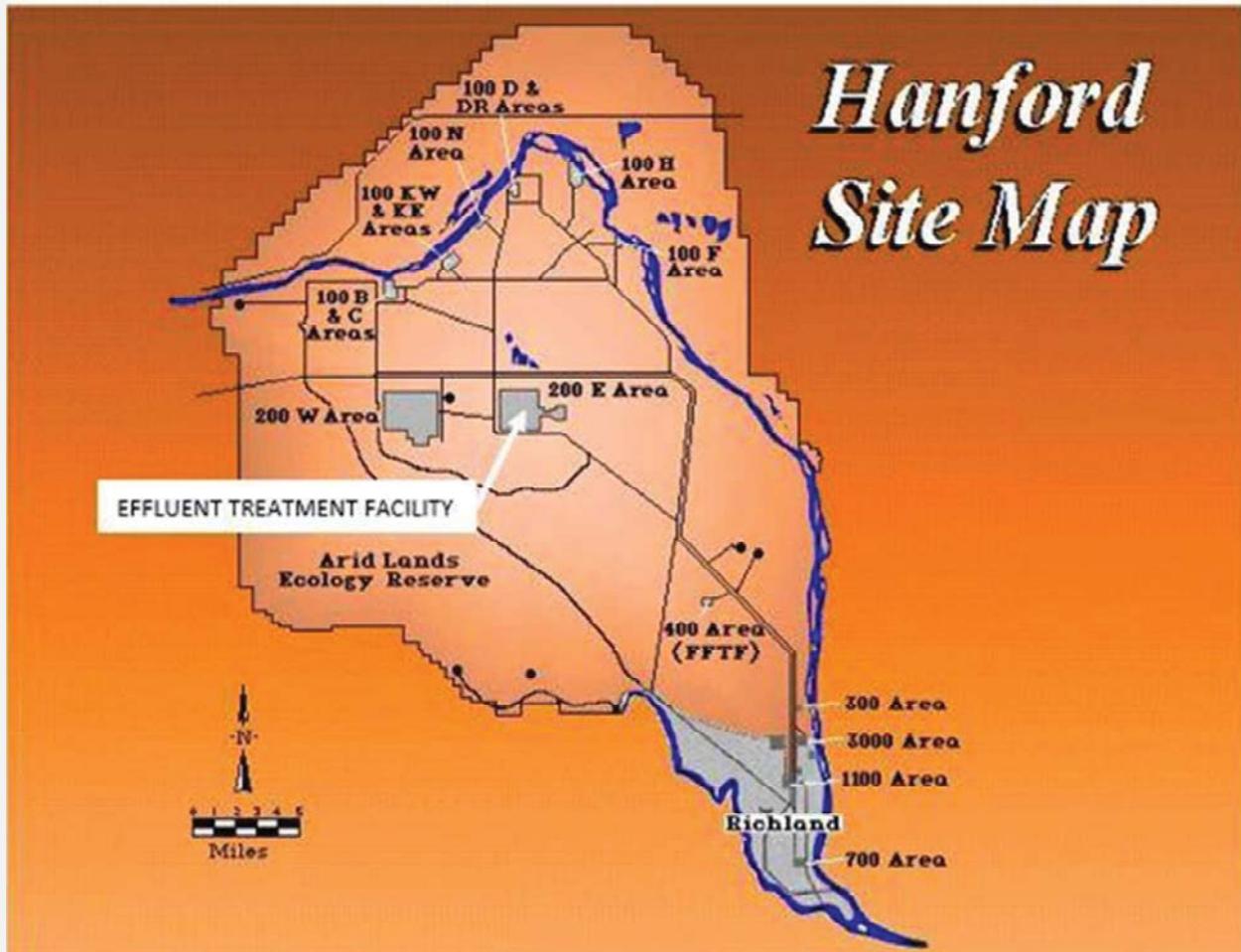
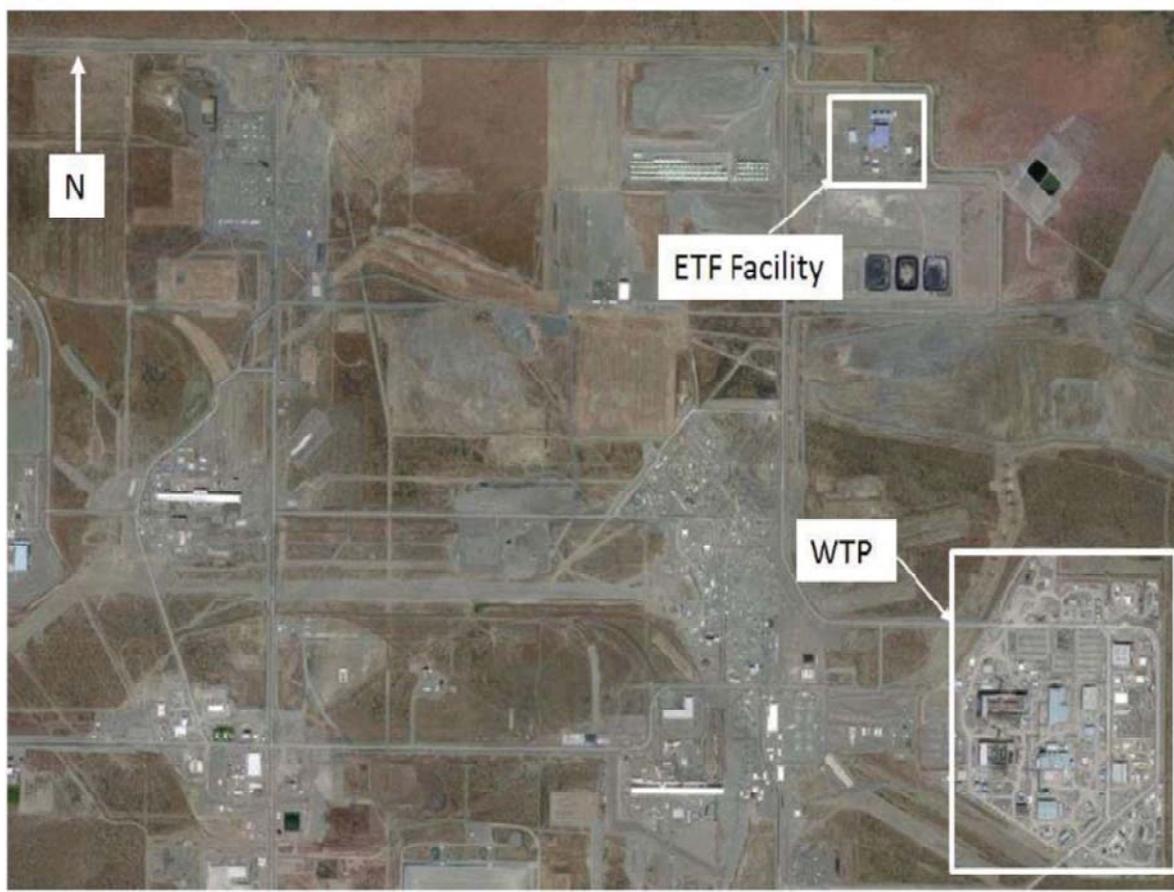


Figure 2: Hanford Site Map Showing the Location of the ETF



**Figure 3: Aerial Photograph Showing the ETF Facility in the 200 East Area**



**Figure 4: Aerial Photograph Showing an Overview of the ETF Facility**



**Figure 5: Photograph of Outside of the ETF Facility**

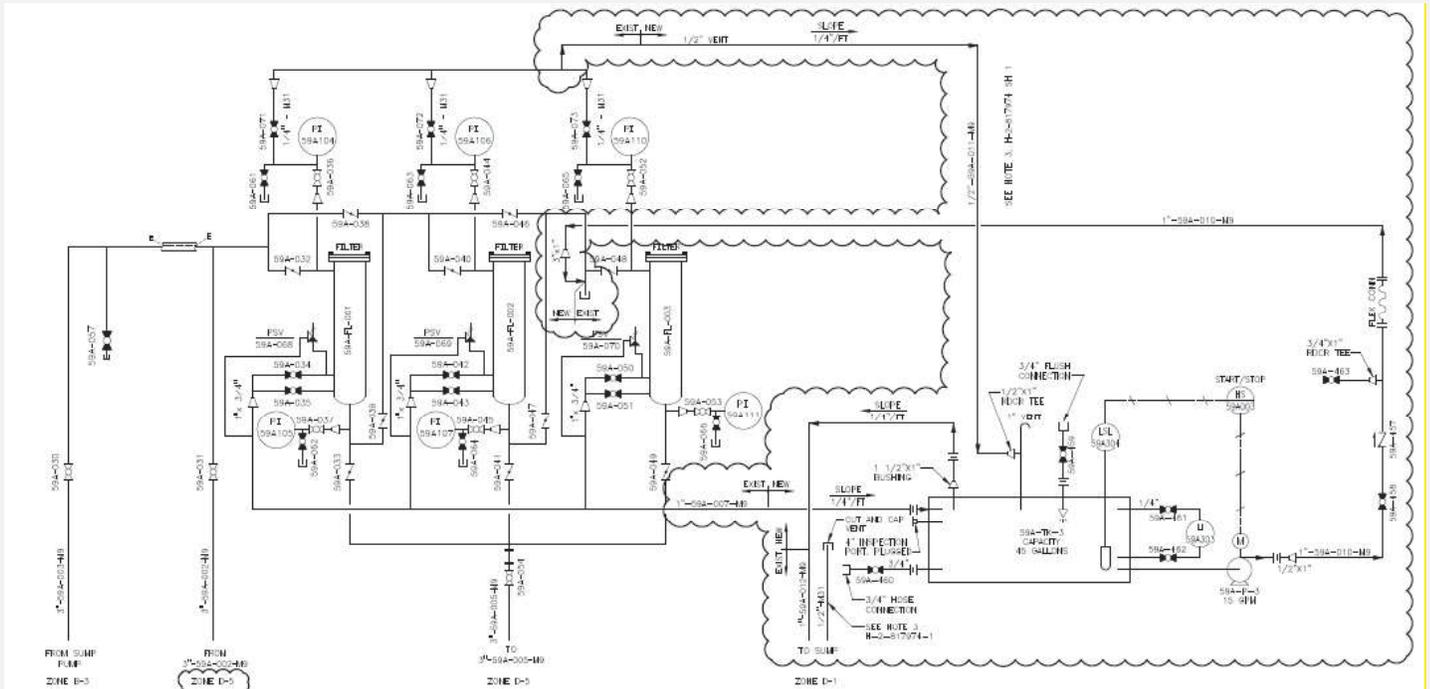
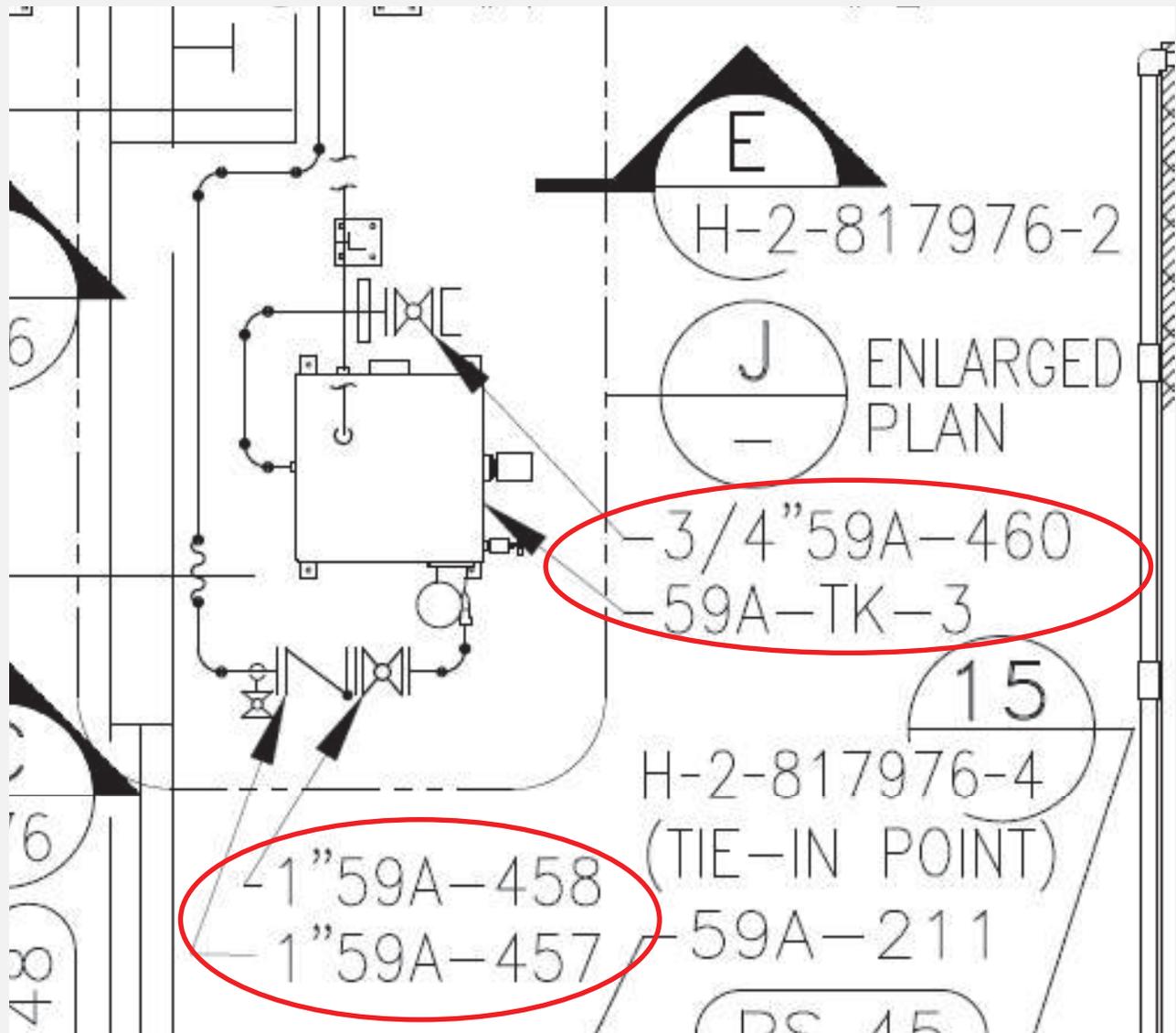
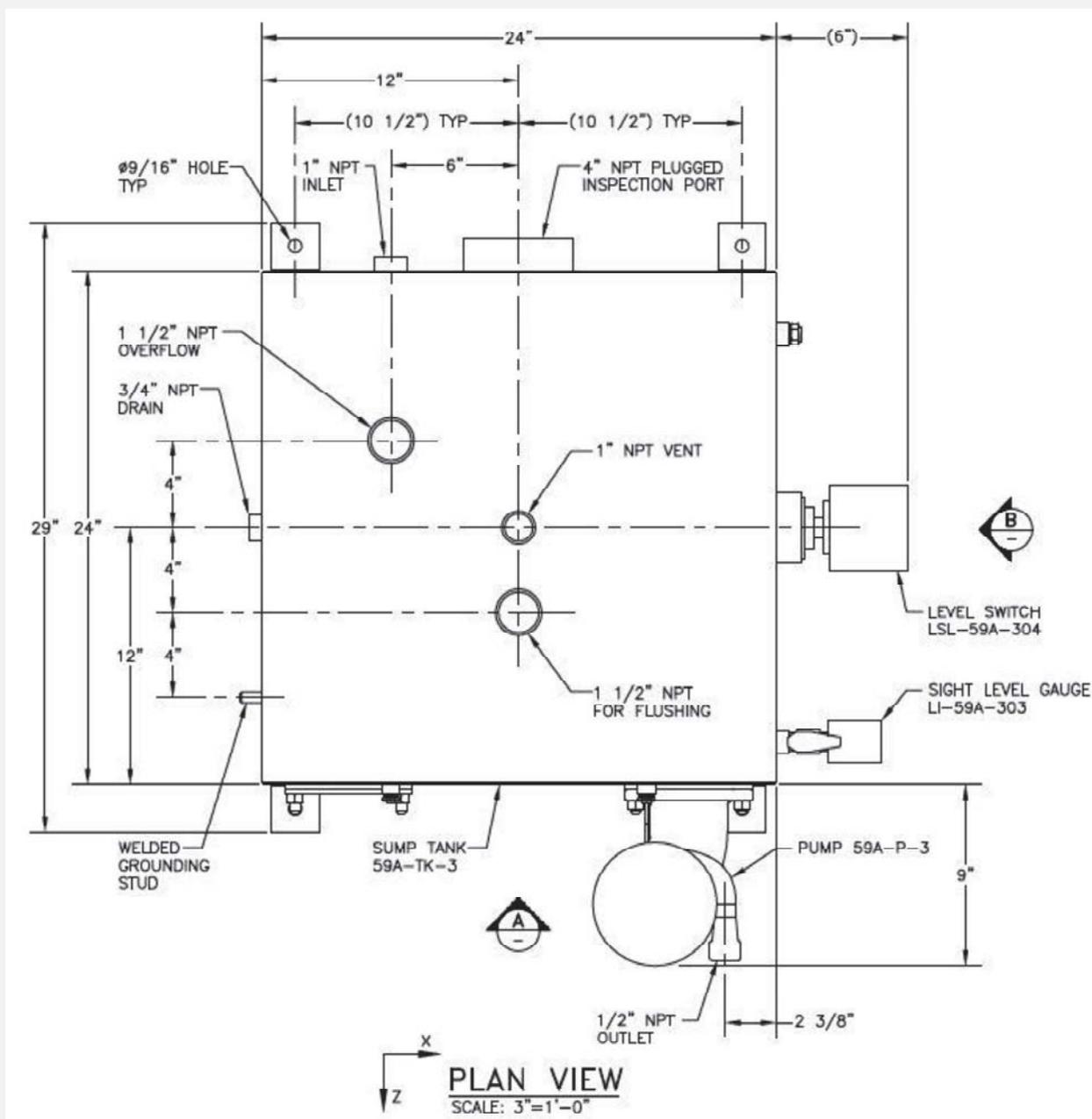


Figure 6: Updated P&ID of Load-In Filter Assembly (H-2-81794, Sheet 2; ECN-714608, Sheet 4)



**Figure 7: Updated Plan of Load-In Filter Assembly (H-2-817975, Sheet 1; ECN-714609, Sheet 11)**



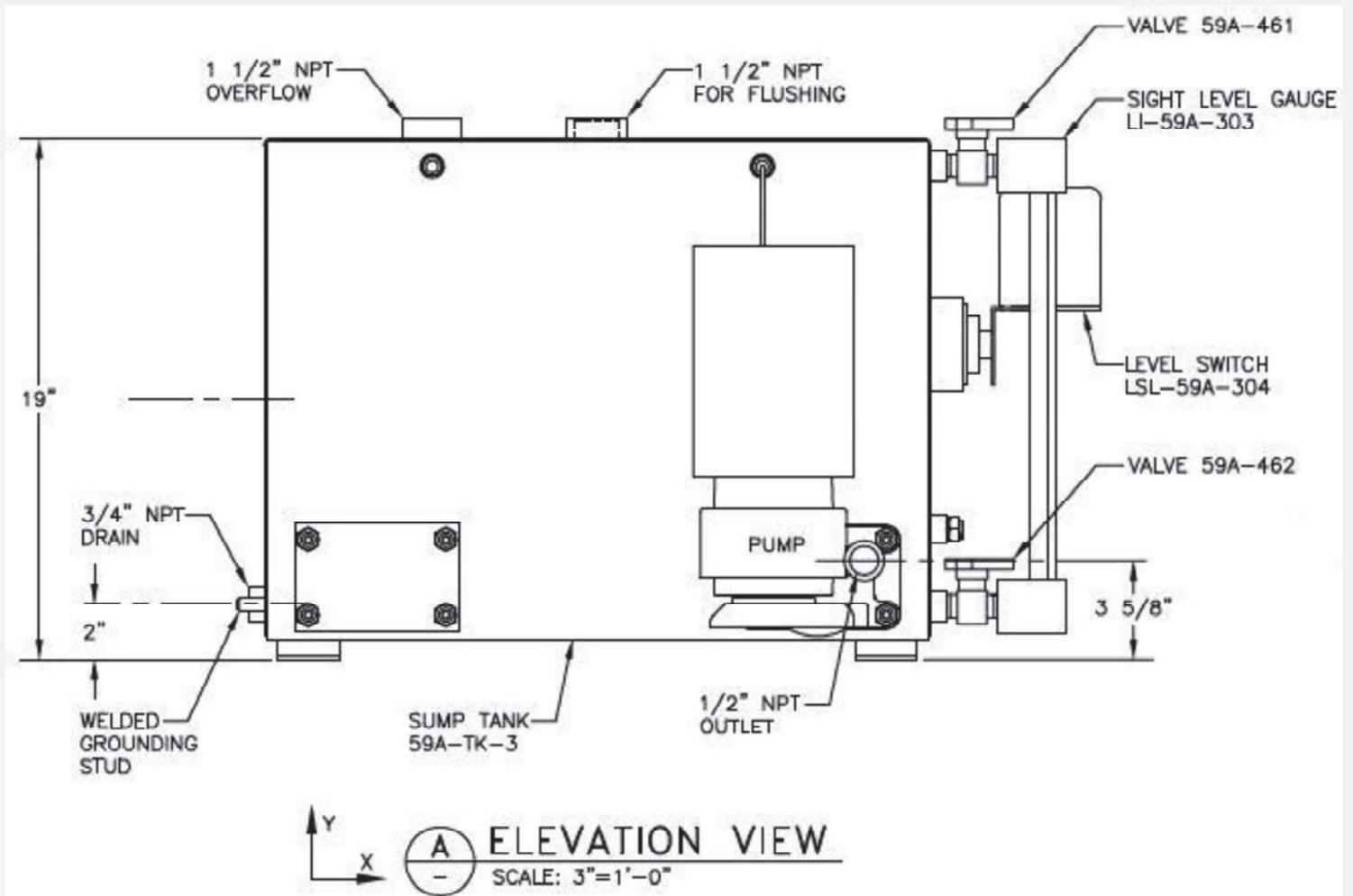


Figure 9: Elevation View "A" of New Sump Tank 59A-TK-3 (Drawing H-9-6113, Sheet 1)

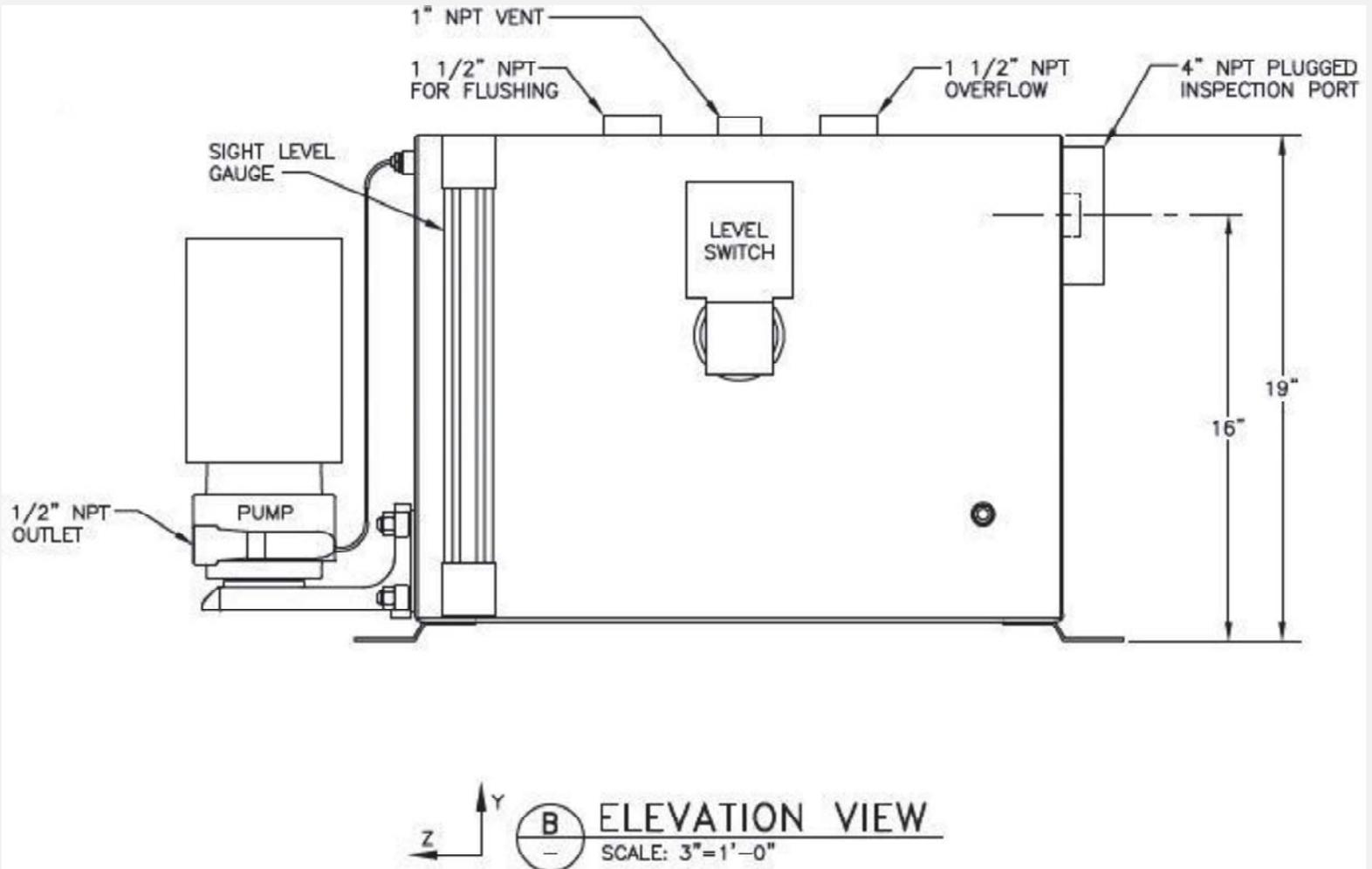


Figure 10: Elevation View "B" of New Sump Tank 59A-TK-3 (Drawing H-9-6113, Sheet 1)



**Figure 11: Photograph of Existing Load-In Filter Assembly**

## 1.2 DESIGN REVIEW REQUIREMENTS

Many of the components required for the transfer of dangerous or mixed waste are regulated by WAC 173-303-640(3), *Design and Installation of New Tank Systems or Components*, requirements. WAC codes require an IQRPE's review of the design of these components prior to installation.

As a basis for the IQRPE certification, a review is performed on a final version of the document design package as prepared and reviewed by WRPS. Documents such as drawings, calculations, ECNs, Engineering Design Transmittals (EDTs), Technical Evaluations, and specifications included in the design review package that are marked as final, and have signatures of the preparer, checker, and approver, are reviewed by the IQRPE as a completed document. All other documents will be reviewed as preliminary or supportive information.

The IQRPE maintains "independence" at all times. Comments and suggestions by others are considered by the IQRPE during the preparation of reports and plans. Only the IQRPE can implement changes to the master IQRPE documents.

### **1.3 DESIGN OVERVIEW FOR ETF LOAD-IN FILTER DRAIN SYSTEM**

This IQRPE Design Assessment Report is prepared for the Owner by an IQRPE to certify that the proposed tank system will have sufficient structural integrity and is acceptable for storing and treating dangerous waste per WAC 173-303-640(3)(a).

The components within the scope of this IQRPE design assessment for the ETF Load-In Filter Drain System Project include only those that either will be, or have the potential to be, in direct contact with waste fluids. All components are situated inside temperature-controlled Building 2025ED of the ETF Load-In Facility. The piping installed for the ETF Load-In Filter Drain System Project is required to comply with HNF-27957.

The ETF Load-In Filter Drain System Project components included in this design review include:

- 45 Gallon Sump Tank: 59A-TK-3
- 15 GPM Pump Assembly: 59A-P-3
- Piping Assemblies: 1"-59A-007-M9, 1"-59A-010-M9, and 1"-59A-012-M9
- Tubing Assembly: ½"-59A-011-M9

### **1.4 SCOPE OF IQRPE DESIGN ASSESSMENT**

This IQRPE design assessment includes a comprehensive review of the design package per WAC 173-303-640. Any exceptions taken by the IQRPE to incomplete or unavailable items in the design package are listed in Section 2.1 at the end of each subsection.

#### **1.4.1 Portions of the ETF Load-In Filter Drain System Included in Scope for IQRPE Certification**

Documents included in this Design Assessment review for the ETF Load-In Filter Drain System Project include:

- Calculations
- Design and Fabrication Drawings
- ECNs
- Piping class specification
- Piping and Instrumentation Drawings (P&IDs)

A list of documents reviewed by the IQRPE as part of this Design Assessment Report is included in Section 4.0.

#### **1.4.2 Portions of the ETF Load-In Filter Drain System Project Not Included in Scope for IQRPE Certification**

This IQRPE design assessment was limited only to the ETF Load-In Filter Drain System Project components that either will be, or have the potential to be, in contact with waste. Components that are not within the scope of this IQRPE design assessment include those that will not be in direct contact with waste fluids, with the exception of those components that are being relied upon to provide protection to other components that do contain waste.

## 2.0 ASSESSMENT SUMMARY

Systems within the IQRPE scope of this assessment (Section 1.4.1) are adequately designed to prevent failure caused by corrosion or by structural loads imposed by the system's intended service. These conditions are described in more detail below. The system design complies with the applicable requirements of WAC 173-303-640. Design documents that were reviewed as part of this assessment are referenced in Section 4.0.

### 2.1 CODES, STANDARDS, AND REGULATIONS

The codes, standards, and regulations specifically used during the preparation of this certification are referenced, as necessary, throughout this report. A complete list of applicable references is contained in Section 4.0.

### 2.2 BASIS OF DESIGN

#### 2.2.1 Structural Design Standards

WAC 173-303-640(3) requires that an IQRPE certify that the proposed tank system will have sufficient structural integrity and is acceptable for storing and treating dangerous waste. This assessment must show, in accordance with WAC 173-303-640(3)(a), *Design and Installation of New Tank Systems or Components*, that the foundation, structural support, seams, connections, and pressure controls are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste to be stored and treated, and corrosion protection to ensure that it will not collapse, rupture, or fail.

The ETF Load-In Filter Drain System Project involves the installation of piping and components above the concrete floor, and entirely inside, temperature-controlled Building 2025ED of the ETF Load-In Facility; this configuration prevents any contact with either soil or water. The nature and location of the task does not introduce any structural concerns related to freeze protection of piping, frost heaving of foundations, and back fill requirements to provide structural support to prevent excessive settlement and corrosion. The above ground and interior installation eliminates any need for cathodic protection measures that could be required if there were contact with soil. The installation will be located near the west wall of Building 2025ED and will be out of the path of incoming tanker trucks so the effects of vehicular traffic is not a concern.

The technical requirements for the design, materials of construction, fabrication, and testing requirements associated with Sump Tank 59A-TK-3 and Pump 59A-P-3 are in accordance with H-9-6113, *Piping ETF Load-In Facility Filter Drain Sump Tank*. All structural welding and weld inspections are required to meet the requirements of AWS D1.1/D1.1M, *Structural Welding Code – Steel*, for the welding of structural carbon steel and AWS D1.6/D1.6M, *Structural Welding Code – Stainless Steel*, for the welding of structural stainless steel and for welding stainless steel to carbon steel. All welding is in accordance with the category of statically loaded criteria (ECN-714609).

The anchorage of Filter Drain Sump Tank 59A-TK-3 was evaluated to assure that the anchors were designed to withstand loads associated with both the operation of the facility and those associated with the effects of Natural Phenomena Hazards (NPH). The anchorage was found to be adequate

in satisfying all anticipated loading conditions in addition to code requirements (RPP-CALC-62877, *ETF Load-In Filter Drain Modification: Filter Drain Sump Tank Anchorage Analysis*).

RPP-CALC-62734, *ETF Load-In Filter Drain System Pipe Stress Analysis*, evaluated the drain and sump tank piping for compliance to ASME B31.3 code requirements. The calculation determined that all segments of the new drainage piping system and sump tank installed per ECN-714608 and ECN-714609 are in compliance with ASME B31.3 stress requirements.

The ETF Load-In Filter Drain System Project will utilize stainless steel piping and fittings. All of these components are commercially purchased items and will not be utilized in any manner that is incompatible with their intended applications. Any structural requirements that must be met by the piping and fittings, classified as ETF Load-In Pipe Class M-9 (System 59A), are inherent to the fact that they must meet the requirements of ASME B31.3. These requirements are established in specification HNF-27957.

It should be noted that ETF Load-In Pipe Class M-9 (System 59A), described in the current revision (Rev. 4) of HNF-27957, is applicable only to pipe sizes from 1-½” through 10”. The ETF Load-In Filter Drain System Project will utilize pipes sizes that are smaller than 1-½”. A future revision to HNF-27957 will be made to specifically include the smaller pipe sizes so that the existing requirements for the Class M-9 (System 59A) code will be identified as clearly applicable to them also.

The IQRPE concludes that the appropriate structural considerations for the ETF Load-In Filter Drain System Project have been made.

### **2.2.1.1 Structural Design Exceptions**

Based on the above review, there are no IQRPE certification exceptions to the structural design of the piping materials used for the ETF Load-In Filter Drain System Project.

### **2.2.1.2 Structural Design Conclusion**

The IQRPE concurs that this structural design meets the requirements of WAC 173-303-640(3)(a).

## **2.2.2 Waste Compatibility**

Regulations located in WAC 173-303-640(3)(a) require tank systems be compatible with the wastes transported or otherwise handled. Piping materials of the ETF Load-In Filter Drain System Project meet the requirements for Class M9 (System 59A) piping per HNF-27957 (MT-50409). Class M9 (System 59A) piping is ASTM A312 TP304L stainless steel (HNF-27957). Component materials that either will be in contact with tank waste or have the possibility of coming into contact are summarized in Table 1, below.

This review does not cover waste compatibility issues that may be associated with secondary containment components such as the ETF Load-In Facility floor itself or floor linings or coatings.

**Table 1: ETF Load-In Filter Drain System Materials of Construction**

Item	Drawing Location	Description	Item #	Component Materials / Notes
Filter Sump Tank 59A-TK-3	H-9-6113	45 gal.	--	ASTM A240 304/304L Stainless Steel
Filter Load-in Pump 59A-P-3	H-9-6113	1/3 hp; 15 gpm	--	All wetted components: 304/304L Stainless Steel
ETF Load-In Filter Drain System Piping Class M-9 (Syst. 59A)	ECN-714609 (Sheet 7)	Tubing less than 3/4"	--	ASTM A213/A269 Seamless 316 SST
		1/2" Piping	--	ASTM A312 TP 304L SST (Piping) ASTM A403-WP304L SST (Fittings)
		3/4" Piping	--	ASTM A312 TP 304L SST (Piping) ASTM A403-WP304L SST (Fittings)
		1" Piping	--	ASTM A312 TP 304L SST (Piping) ASTM A403-WP304L SST (Fittings)
		Flange Gaskets	--	Flexitallic, <sup>®</sup> Flexicarb SR, graphite laminate
		Ball Valves: 1" and larger	--	ASTM A351 Grade CF8M Stainless Steel
		Ball Valves: less than 1"	--	ASTM A351 Grade CF8M Stainless Steel
		Unions	--	ASTM A351 Grade CF8 304 Stainless Steel
		Swing check valves	--	ASTM A351 Grade CF8M Stainless Steel
		Branch Connections	--	ASTM A182 Grade F304L stainless steel
		Flanges	--	ASTM A182 Grade F304L stainless steel
		Flexible Connection	--	304 SST hose 304/304L SST End Fittings

All pipe and tubing materials in contact with liquid waste or its vapor are austenitic stainless steel. Flange gaskets are Flexitallic<sup>®1</sup> Flexicarb SR. The Flexitallic<sup>®</sup> gasket consists of an austenitic stainless steel outer ring with a PTFE filler. Both austenitic stainless steel and PTFE have a long history of successful use with Hanford waste.

### 2.2.2.1 Anticipated Chemistry and Controls

Information on the composition of the various ETF waste streams can be found in documents CHPRC-01579, *200 Area Effluent Treatment Facility Basin 44 Campaign 2011 Process Control Plan* and RPP-PLAN-60845, *Effluent Treatment Facility Basin 43 2016 Campaign Process Control Plan*.

<sup>1</sup> Flexitallic is a registered trademark of The Flexitallic Group, Houston, Texas.

### 2.2.2.2 Waste Compatibility Exceptions

Based on the above review, there are no IQRPE certification exceptions to the anticipated waste compatibility or corrosion issues with the piping materials used for the ETF Load-In Filter Drain System Project that may come into contact with the liquid waste stream.

### 2.2.2.3 Waste Compatibility Conclusion

The IQRPE concurs that this design basis meets the requirements of WAC 173-303-640(3)(a).

## 2.2.3 Pressure Control System

WAC 173-303-640 requires that an IQRPE certify that the proposed tank system has been designed with appropriate pressure control systems. The piping components of the ETF Load-In Filter Drain System Project were evaluated for pressure control issues in RPP-CALC-62734.

It should be noted that ETF Load-In Pipe Class M-9 (System 59A), described in the current revision (Rev. 4) of HNF-27957, is applicable only to pipe sizes from 1-1/2" through 10". The ETF Load-In Filter Drain System Project will utilize pipe sizes that are smaller than 1-1/2". A future revision to HNF-27957 will be made to specifically include the smaller pipe sizes so that the existing requirements for the Class M-9 (System 59A) code will be identified as clearly applicable to them also.

In accordance with MT-50409, the piping and components of the ETF Load-In Filter Drain System Project shall meet the following:

- Piping shall be designed, fabricated, installed, inspected, examined, and tested in accordance with ASME B31.3, 2016 edition, Normal Fluid Service Requirements
- All piping shall meet the requirements for class M-9 piping per HNF-27957.
- Piping Design conditions: Maximum pressure 100 psig; Maximum temperature 150 deg. F; Design life 20 years; Corrosion allowance 0.2 mils per year.
- Filter Sump Tank 59A-TK-3 is an atmospheric tank and has no applicable pressure or vacuum related requirements

The piping is hydrostatically tested at a test pressure of 150 psig. The pump and tank are isolated during the leak pressure testing. The tank, along with the vent and pump, are leak tested with 10 feet of water in accordance with Uniform Plumbing Code (UPC) 712.2 water test (ECN-714609).

RPP-CALC-62734 evaluated the drain and sump tank piping for compliance to ASME B31.3, *Process Piping*, code requirements. The calculation determined that all segments of the new drainage piping system and sump tank installed per ECN-714608 and ECN-714609 are in compliance with ASME B31.3 stress requirements.

A calculation attached to the ECN-714609 was performed to establish an appropriate capacity for Filter Load-in Pump 59A-P-3. The calculation computed the pressure drop from the discharge of the pump to the inlet header of the filter housings and determined that the selected pump would need to deliver a minimum of 15 gpm back to the filter housings. The maximum deadhead pressure of the selected pump is approximately 26 psig. This is significant less than the piping and filter housing design pressures of 100 psig and 150 psig respectively.

The IQRPE concludes that the appropriate pressure control considerations for ETF Load-in Filter System have been made.

### **2.2.3.1 Pressure Control System Exceptions**

Based on the above review, there are no IQRPE certification exceptions to the pressure control system review.

### **2.2.3.2 Pressure Control System Assessment Conclusion**

The IQRPE concurs that this design basis meets the requirements of WAC 173-303-640.

## **2.2.4 Secondary Containment System**

WAC 173-303-640 requires that an IQRPE certify that the proposed tank system has been designed with an appropriate secondary containment system. Secondary containment for tank systems that store, accumulate, or treat dangerous waste must be designed and installed to meet the requirements of WAC 173-303-640(4)(b). Secondary containment for the ETF Load-In Filter Drain System Project is accomplished by the floor and/or floor linings of ETF Load-In Facility Building 2025ED.

### **2.2.4.1 Secondary Containment System Exceptions**

Due to the fact that secondary containment was already incorporated into the ETF Load-In Facility Building 2025ED by virtue of its design, there are no exceptions to the IQRPE certification of the secondary containment review assessment.

### **2.2.4.2 Secondary Containment System Assessment Conclusion**

The IQRPE concurs that this design basis meets the requirements of WAC 173-303-640.

## **2.2.5 Ancillary Equipment Design**

WAC 173-303-640(3) requires that an IQRPE certify that the proposed tank system has been designed with appropriate ancillary equipment in accordance with the requirements of WAC 170-303-640(3)(f) and (4)(f). WAC 173-303-040, *Definitions*, defines “Ancillary Equipment” as any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of dangerous waste from its point of generation to a storage or treatment tank(s), between dangerous waste storage and treatment tanks to a point of disposal on-site, or to a point of shipment for disposal off-site. A review of the ancillary equipment design is normally part of the IQRPE review. The scope of this review includes components listed as in-scope in Section 1.4.1 and as described in the review sections above. Piping, fittings, flanges, valves, and pumps have been evaluated by the IQRPE throughout this report, which includes all ancillary equipment in-scope for this design assessment. No other ancillary equipment was identified.

### **2.2.5.1 Ancillary Equipment Exceptions**

Based on the above review, there are no IQRPE certification exceptions to the ancillary equipment design review.

### **2.2.5.2 Ancillary Equipment Conclusion**

The IQRPE concurs that this design basis meets the requirements of WAC 173-303-640(3).

### **2.2.6 P&ID Review**

The P&ID details for the ETF Load-In Filter Drain System Project are depicted on H-2-817974, Sheets 1&2, *P&ID ETF Truck Load-In Station*, and as modified per ECN-714608 and ECN-714609.

The IQRPE concludes that the appropriate P&ID review has been made.

### **2.2.7 Corrosion Assessment**

WAC 173-303-640 requires an IQRPE corrosion assessment of only the external portion of the primary containment that is in direct contact with soil or water.

The components of the ETF Load-In Filter Drain System Project are situated above the floor and are entirely inside temperature-controlled Building 2025ED of the ETF Load-In Facility; they will not be in contact with either soil or water.

The IQRPE concludes that appropriate corrosion considerations have been made.

#### **2.2.7.1 Corrosion Assessment Exceptions**

Based on the above requirements, there are no IQRPE certification exceptions to the corrosion assessment review with the materials.

#### **2.2.7.2 Corrosion Assessment Conclusion**

The IQRPE concurs that this design basis meets the requirements of WAC 173-303-640(3).

### **2.2.8 Recommended Inspection Schedule**

Inspections completed for the initial installation are described in IA-318173-01. Per the requirements of WAC 173-303-640(3)(c), the Installation Assessment Report provides Inspection Reports documenting installation and any modifications applicable to this design assessment.

Per the requirements of WAC 173-303-640(2)(e), “a schedule for conducting integrity assessments over the life of the tank to ensure that the tank retains its structural integrity and will not collapse, rupture, or fail. The schedule must be based on the results of past integrity assessments, age of the tank system, materials of construction, characteristics of the waste, and any other relevant factors.”

The new equipment installed under this document for the ETF Load-In Filter Drain System Project includes:

- 45 Gallon Sump Tank: 59A-TK-3
- 15 GPM Pump Assembly: 59A-P-3
- Piping Assemblies: 1"-59A-007-M9, 1"-59A-010-M9, and 1"-59A-012-M9
- Tubing Assembly: ½"-59A-011-M9

The ETF Load-In Filter Drain System Project has a system design life of 20 years (MT-50409).

Because these items are new, no prior integrity assessments have been completed. Since these items are expected to be installed in 2020, or later, the age of these elements is new. The materials of construction are compatible with the wastes as detailed in Section 2.2.2 of this report. The characteristics of the wastes is also covered in that section. Additionally, corrosion is evaluated in Section 2.2.7 of this report. To allow time for an integrity assessment, it is recommended that a complete Integrity Assessment Report be completed of the above tank system elements within 15 years after initial installation or first contact with waste, whichever is later. It is anticipated these new elements of the tank system will be evaluated as part of the entire system and will be included in the overall IQRPE Integrity Assessment Report for this system in accordance with the interval for integrity assessment established by the operator for the system, as long as the scheduled integrity assessment falls within the recommended period provided here.

### 3.0 DESIGN REVIEW ASSESSMENT CERTIFICATIONS

The ETF Load-In Filter Drain System Project, as previously described, has been reviewed by the IQRPE and was assessed to be in compliance with the applicable sections of WAC 173-303-640(3). These results are based on a review of the applicable codes, standards, and documents.

A listing of the IQRPE, Professional Engineers, and other engineers who participated in the preparation of this design assessment report is provided below.

#### Independent Qualified Registered Professional Engineer

Sohan S. Gahir

- P.E., Mechanical Engineering, License No. 18503

#### Professional Engineers (PE)

Alexander P. Butterfield

- P.E., Mechanical Engineering, License No. 52255

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- P.E., Chemical, Fire Protection, License No. 47831

Michel J. Langevin

- P.E., Mechanical Engineering, License No. 23759

#### BS Degreed Engineer

Nathaniel R. Weinman

- E.I.T., Mechanical Engineering, Enrollment Number E-118188

The certification below is in accordance with the requirements of WAC 173-303-810(13)(a), *Certification*.

**Report Lead IQRPE:**

WAC 173-303-810(13)(a)

*I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.*

*Sohan S. Gahir*  
10/8/2020

Report Reviewed by:

Sohan S. Gahir, P.E.  
Independent Qualified Registered Professional Engineer

October 8, 2020  
Date

#### 4.0 REFERENCES

- ASME B31.3, 2016, *Process Piping*, American Society of Mechanical Engineers, New York, New York.
- ASTM A182/A182M-18a, 2018, *Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A213/A213M-19a, 2019, *Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat –Exchanger Tubes*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A240/A240M 2018, *Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A269/A269M-15a, 2019, *Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A312/A312M-18a, 2018, *Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A351/A351M-18e1, 2019, *Standard Specification for Castings, Austenitic, for Pressure-Containing Parts*, ASTM International, West Conshohocken, Pennsylvania.
- ASTM A403/A403M-18a, 2018, *Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings*, ASTM International, West Conshohocken, Pennsylvania.
- AWS D1.1/D1.1M: 2015, *Structural Welding Code - Steel*, American Welding Society, Miami, Florida.
- AWS D1.6/D1.6M: 2017, *Structural Welding Code – Stainless Steel*, American Welding Society, Miami, Florida.
- CHPRC-01579, 2011, *200 Area Effluent Treatment Facility Basin 44 Campaign 2011 Process Control Plan*, Rev. 00, CH2MHill Plateau Remediation Company, Richland, Washington.
- ECN-714608, 2020, *ETF Load-In Filter Drain P&ID ECN*, Rev. 1, Washington River Protection Solutions, LLC, Richland, Washington.
- ECN-714609, 2020, *ETF Load-In Filter Drain Mechanical ECN*, Rev. 2, Washington River Protection Solutions, LLC, Richland, Washington.
- H-2-817974, 2019, Sheet 1, *P&ID ETF Truck Load-In Station*, Rev. 19, US Department of Energy, Richland, Washington.
- H-2-817974, 2019, Sheet 2, *P&ID ETF Truck Load-In Station*, Rev. 4, US Department of Energy, Richland, Washington.

- H-2-817975, Sheet 1, 2019, *Piping ETF Truck Load-In & Purgewater Unloading Station Plan*, Rev. 12, US Department of Energy, Richland, Washington.
- H-9-6113, 2019, Sheet 1, *Piping ETF Load-In Facility Filter Drain Sump Tank*, Rev. 00, US Department of Energy, Richland, Washington.
- HNF-27957, 2020, *200 Area ETF, Load-In, and LERF Pipe Class Specification*, Rev. 4, Washington River Protection Solutions, LLC, Richland, Washington.
- IA-318173-01, 2020, *Independent Qualified Registered Professional Engineer Installation Assessment Report for ETF Load-In Filter Drain System*, Rev. 0, Meier Architecture • Engineering, Kennewick, Washington
- IP-318173-01, 2019, *Independent Qualified Registered Professional Engineer Inspection Plan for ETF Load-In filter Drain System*, Rev. 0, Meier Architecture • Engineering, Kennewick, Washington.
- MT-50409 2020, *ETF Load-In Filter Drain Modification*, Rev. 1, Washington River Protection Solutions, LLC, Richland, Washington.
- RPP-CALC-62734, 2019, *ETF Load-In, Filter Drain System Pipe Stress Analysis*, Rev. 00, Washington River Protection Solutions, LLC, Richland, Washington.
- RPP-CALC-62877, 2019, *ETF Load-In Filter Drain Modification: Filter Drain Sump Tank Anchorage Analysis*, Rev. 00, Washington River Protection Solutions, LLC, Richland, Washington.
- RPP-IQRPE-50043, 2019, *FY19 Effluent Treatment Facility IQRPE Integrity Assessment*, Rev. 0, Washington River Protection Solutions, LLC, Richland, Washington.
- RPP-PLAN-60845, 2017, *Effluent Treatment Facility Basin 43 2016 Campaign Process Control Plan*, Rev. 1, Washington River Protection Solutions, LLC, Richland, Washington.
- Statement of Work (SOW) No. 318173, 2019, *IQRPE Support to ETF Load-In Filter Drain System (BMA 64658)*, Rev. 0, Washington River Protection Solutions, LLC, Richland, Washington.
- Uniform Plumbing Code, 2018, *The International Association of Plumbing and Mechanical Officials (IAPMO)*, Ontario, CA.
- WAC 173-303, “*Dangerous Waste Regulations*,” Washington Administrative Code, as amended.
- WAC 173-303-040, “*Definitions*,” Washington Administrative Code, as amended.
- WAC 173-303-640(3), “*Design and Installation of New Tank Systems or Components*,” Washington Administrative Code, as amended.
- WAC 173-303-640, “*Tank Systems*,” Washington Administrative Code, as amended.
- WAC 173-303-810(13)(a), “*Certification*,” Washington Administrative Code, as amended.



Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

<b>Hanford Facility RCRA Permit Modification Notification Form</b>			
Unit: <b>Waste Treatment and Immobilization Plant</b>		Permit Part: <b>Part III, Operating Unit Group 10</b>	
<u>Description of Modification:</u>			
The purpose of this Class 1 prime modification is to update revisions of a Lab facility Process Flow Diagram and ten P&IDs in Appendix 11.1 and 11.2 of the DWP:			
Replace:	24590-LAB-M5-V17T-00029, Rev. 004	With:	24590-LAB-M5-V17T-00029, Rev. 005
Replace:	24590-LAB-M6-RLD-00001002, Rev. 000	With:	24590-LAB-M6-RLD-00001002, Rev. 001
Replace:	24590-LAB-M6-RLD-00001003, Rev. 000	With:	24590-LAB-M6-RLD-00001003, Rev. 001
Replace:	24590-LAB-M6-RLD-00001004, Rev. 000	With:	24590-LAB-M6-RLD-00001004, Rev. 001
Replace:	24590-LAB-M6-RLD-00002001, Rev. 001	With:	24590-LAB-M6-RLD-00002001, Rev. 002
Replace:	24590-LAB-M6-RLD-00002003, Rev. 002	With:	24590-LAB-M6-RLD-00002003, Rev. 003
Replace:	24590-LAB-M6-RLD-00006001, Rev. 000	With:	24590-LAB-M6-RLD-00006001, Rev. 001
Replace:	24590-LAB-M6-RLD-00006002, Rev. 000	With:	24590-LAB-M6-RLD-00006002, Rev. 001
Replace:	24590-LAB-M6-RLD-00006003, Rev. 000	With:	24590-LAB-M6-RLD-00006003, Rev. 001
Replace:	24590-LAB-M6-RLD-00007001, Rev. 000	With:	24590-LAB-M6-RLD-00007001, Rev. 001
Replace:	24590-LAB-M6-RLD-00007002, Rev. 000	With:	24590-LAB-M6-RLD-00007002, Rev. 001
<p>This modification requests Ecology approval and incorporation into the permit the specific changes to the Process Flow Diagram and Piping and Instrument Diagrams (P&amp;IDs).</p> <p>Changes to the Process Flow Diagram and Piping and Instrument Diagrams for the Lab Facility are summarized below:</p> <p>24590-LAB-M5-V17T-00029, Rev. 005, WTP Analytical Laboratory Process Flow Diagram Radioactive Liquid Disposal</p> <ul style="list-style-type: none"> <li>• Note 4: For “Cold Commissioning” only. Prior to the start of radiological waste processing at the WTP, the Lab RLD System shall have the capability to transfer the non-radioactive, dangerous liquid waste from each of the Lab RLD vessels by tanker truck. Temporary filters will be used as needed.</li> <li>• Note 11 and 14: Deleted</li> <li>• Note 20: Revision 5: Revised to clarify process engineering design requirements and align with PFD desktop instruction 24590-WTP-3DI-V04W-00001. Also corrected destination of RLD-VSL-000164 ventilation to show C5 ventilation system destination.</li> <li>• References 7-9 added to describe above in Note 20</li> <li>• Atomic Energy Act statement added</li> </ul> <p>24590-LAB-M6-RLD-00001002, Rev. 001, P&amp;ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer RLD-PMP-00183A</p> <ul style="list-style-type: none"> <li>• Note 10: Mesh Screen Cap</li> <li>• Note 13: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00093, -00095, -00098, 24590-WTP-M6N-50-00073, 24590-WTP-EIE-J-16-0001, Rev. 0, and 24590-WTP-EIE-PR-15-0001, Rev. 1. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. No changes were required for incorporation of 24590-WTP-EIE-PR-15-0001. Revised reference 1 and updated ADR revision number</li> <li>• Reference 1 added to support revision outlined in Note 13.</li> </ul>			

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

24590-LAB-M6-RLD-00001003, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer RLD-PMP-00183B

- Note 10: Mesh Screen Cap
- Note 13: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00093, -00098, 24590-WTP-M6N-50-00073, 24590-WTP-EIE-J-16-0001, Rev. 0, and 24590-WTP-EIE-PR-15-0001, Rev. 1. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. No changes were required for incorporation of 24590-WTP-EIE-PR-15-0001. Revised reference 1 and updated ADR revision number
- Reference 1 added to support revision outlined in Note 13.

24590-LAB-M6-RLD-00001004, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer Valve Pit

- Note 21: Mesh Screen Cap
- Note 23: Valve hand wheel is accessible above the valve pit cover plate. A portion of the valve extension shaft and shield plug components are safety significant, Quality Level Q, and Seismic Category III. Refer to specification 24590-LAB-3PS-MJW0-T0001.
- Note 24: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00092, -00093, -00098, 24590-LAB-M6N-60-00003, 24590-WTP-M6N-50-00073, and 24590-WTP-EIE-J-16-0001, Rev. 0. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. Revised reference 1, added off sheet connector flag from PWD-LAH-5109 to YC-6131 & YC-6113, updated ADR revision number and off sheet connectors flag.
- Reference 1 added to support revision outlined in Note 24.

24590-LAB-M6-RLD-00002001, Rev. 002, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection and Transfer RLD-VSL-00164

- Note 5: The maximum elevation difference between the inside bottom of the vessel and the inside bottom of the overflow line (at its highest point) shall be 6.84 ft. to yield the maximum operating volume (MOV) of 2740 gal. Moreover, piping beyond the high point shall be free draining with no pockets to the vessel cell.
- Note 14: Revision 2: Incorporated 24590-LAB-M6N-M80T-00008, 24590-LAB-M6N-RLD-00098, 24590-WTP-M6N-50-00073, and 24590-WTP-EIE-J-16-0001, Rev. 0. 24590-WTP-EIE-J-16-0001 incorporated by 24590-WTP-M6N-50-00073. Revised Reference 1, off sheet connectors and updated ADR revision number.
- Reference 1 added to support revision outlined in Note 14

24590-LAB-M6-RLD-00002003, Rev. 003, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection and Transfer RLD-PMP-00182A/B

- Note 19: Revision 3: Incorporated 24590-WTP-FC-P-18-0199, 24590-BOF-EIE-M-15-0123, Rev. 0, 24590-EIE-MS-17-0032, Rev. 1, and 24590-WTP-EIE-J-19-0003, Rev. 0. 24590-BOF-EIE-M-15-0123 incorporated in Rev. 1 of this P&ID. Incorporated 24590-WTP-EIE-SYSE-16-0082 with no impact. Revised off sheet connector coordinates and references
- References 1-3 updated to support revision outlined in Note 19

24590-LAB-M6-RLD-00006001, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection

- Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040001, and -00040003 for routing detail
- Note 14: RLD-HOOD-00059/ -00060/ -00061/ -00062 under sink drains are provided with secondary containment upstream of P-traps. A drain hole at the low point of the outer pipe is provided to direct potential leakage from the annular space of the double wall pipe to the drain pan under each P-trap.
- Note 15: Revision 1: Incorporated 24590-LAB-M6N-RLD-00079, -00097, 24590-WTP-FC-IN-11-0068, and 24590-WTP-FC-IN-12-0109. Incorporated 24590-WTP-FC-P-12-0465 (by reference) and further revised to add drains to support addition of ARL-HOOD-00061/00062. Revised material specification

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

- from N11E to S11C for ARL-HOOD-00059/60/61/62 drains. Added Note 14, revised Reference 1 and updated ADR revision number
  - Reference 1 added to support revision outlined in Note 15
- 24590-LAB-M6-RLD-00006002, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection
  - Note 11: Deleted
  - Note 14: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 for routing details
  - Note 15: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097. Deleted decon shower drain plugs and Note 11. Revised Reference 1 and updated ADR revision number
  - Reference 1 added to support revision outlined in Note 11
- 24590-LAB-M6-RLD-00006003, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection
  - Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 and -00040003 for routing details
  - Note 14: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097, 24590-WTP-FC-IN-12-0109 and 24590-WTP-FC-P-12-0465. Revised Reference 1 and updated ADR Revision number
  - Reference 1 added to support revision outlined in Note 14
- 24590-LAB-M6-RLD-00007001, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Leak Detection Boxes
  - Note 10: Revision 1: Incorporated 24590-LAB-M6N-RLD-00095. Revised Reference 1, added line numbers, and updated ADR Revision number.
  - Reference 1 added to support revision outlined in Note 10
- 24590-LAB-M6-RLD-00007002, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection Drain Header
  - Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 for routing details
  - Note 14: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097. Revised Reference 1, added line numbers, and updated ADR Revision number.
  - Reference 1 added to support revision outlined in Note 14

WAC 173-303-830 Modification Class:	Class 1	Class 1 <sup>1</sup>	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: N/A  
 Enter wording of WAC 173-303-830, Appendix I Modification citation:  
 In accordance with WAC-173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class 1 modification. WAC 173-303-830(4)(d)(i)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

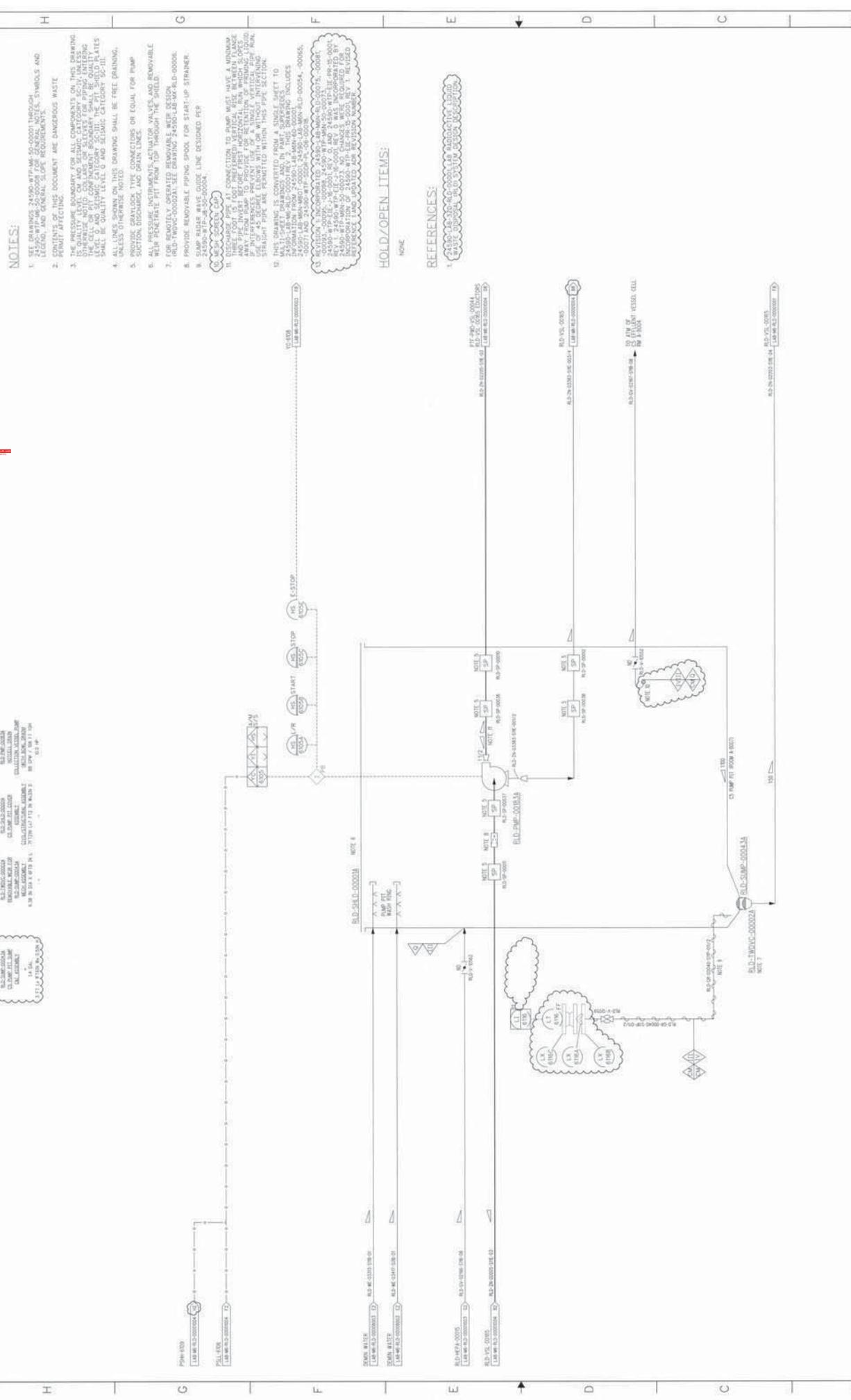
Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

<p>Modification Approved/Concur: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Denied (<i>state reason below</i>)</p> <p><u>Reason for denial:</u>  </p>	<p>Reviewed by Ecology:</p> <p>Digitally signed by Schleif, Stephanie (ECY) <u>10/22/2020</u></p> <hr/> <p><del>S. Schleif</del> Schleif Date</p>
---	---





- SEE DRAWING 24590-LAB-M6-RLD-00001002 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING DOCUMENTS.
- DESIGNER SHALL BE RESPONSIBLE FOR ALL COMPLIANCE WITH THIS DRAWING IS QUALITY LEVEL, CM AND SIZING CATEGORY, UNLESS OTHERWISE NOTED. THE CALLER OF THIS DOCUMENT SHALL BE RESPONSIBLE FOR QUALITY LEVEL, CM AND SIZING CATEGORY. THE CALLER OF THIS DOCUMENT SHALL BE RESPONSIBLE FOR QUALITY LEVEL, CM AND SIZING CATEGORY.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- PROVIDE GRAYLOCK TYPE CONNECTORS OR EQUAL FOR PUMP SECTION, DISCHARGE, AND DRAIN LINES.
- FOR REMOTELY OPERATED REMOVABLE WASTE DESIGN, WASTE SHALL BE FITTED FROM TOP THROUGH THE WHEEL.
- PROVIDE REMOVABLE PIPING SPOOL FOR START-UP STRAINER.
- SUMP RAISE WAVE GUIDE LINE DESIGNED PER COMPANY STANDARD.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO A 24590-LAB-M6-RLD-00001002. THIS DRAWING INCLUDES 24590-LAB-M6-RLD-00001002, 24590-LAB-M6-RLD-00001003, 24590-LAB-M6-RLD-00001004, 24590-LAB-M6-RLD-00001005, 24590-LAB-M6-RLD-00001006, 24590-LAB-M6-RLD-00001007, 24590-LAB-M6-RLD-00001008, 24590-LAB-M6-RLD-00001009, 24590-LAB-M6-RLD-00001010, 24590-LAB-M6-RLD-00001011, 24590-LAB-M6-RLD-00001012, 24590-LAB-M6-RLD-00001013, 24590-LAB-M6-RLD-00001014, 24590-LAB-M6-RLD-00001015, 24590-LAB-M6-RLD-00001016, 24590-LAB-M6-RLD-00001017, 24590-LAB-M6-RLD-00001018, 24590-LAB-M6-RLD-00001019, 24590-LAB-M6-RLD-00001020, 24590-LAB-M6-RLD-00001021, 24590-LAB-M6-RLD-00001022, 24590-LAB-M6-RLD-00001023, 24590-LAB-M6-RLD-00001024, 24590-LAB-M6-RLD-00001025, 24590-LAB-M6-RLD-00001026, 24590-LAB-M6-RLD-00001027, 24590-LAB-M6-RLD-00001028, 24590-LAB-M6-RLD-00001029, 24590-LAB-M6-RLD-00001030, 24590-LAB-M6-RLD-00001031, 24590-LAB-M6-RLD-00001032, 24590-LAB-M6-RLD-00001033, 24590-LAB-M6-RLD-00001034, 24590-LAB-M6-RLD-00001035, 24590-LAB-M6-RLD-00001036, 24590-LAB-M6-RLD-00001037, 24590-LAB-M6-RLD-00001038, 24590-LAB-M6-RLD-00001039, 24590-LAB-M6-RLD-00001040, 24590-LAB-M6-RLD-00001041, 24590-LAB-M6-RLD-00001042, 24590-LAB-M6-RLD-00001043, 24590-LAB-M6-RLD-00001044, 24590-LAB-M6-RLD-00001045, 24590-LAB-M6-RLD-00001046, 24590-LAB-M6-RLD-00001047, 24590-LAB-M6-RLD-00001048, 24590-LAB-M6-RLD-00001049, 24590-LAB-M6-RLD-00001050, 24590-LAB-M6-RLD-00001051, 24590-LAB-M6-RLD-00001052, 24590-LAB-M6-RLD-00001053, 24590-LAB-M6-RLD-00001054, 24590-LAB-M6-RLD-00001055, 24590-LAB-M6-RLD-00001056, 24590-LAB-M6-RLD-00001057, 24590-LAB-M6-RLD-00001058, 24590-LAB-M6-RLD-00001059, 24590-LAB-M6-RLD-00001060, 24590-LAB-M6-RLD-00001061, 24590-LAB-M6-RLD-00001062, 24590-LAB-M6-RLD-00001063, 24590-LAB-M6-RLD-00001064, 24590-LAB-M6-RLD-00001065, 24590-LAB-M6-RLD-00001066, 24590-LAB-M6-RLD-00001067, 24590-LAB-M6-RLD-00001068, 24590-LAB-M6-RLD-00001069, 24590-LAB-M6-RLD-00001070, 24590-LAB-M6-RLD-00001071, 24590-LAB-M6-RLD-00001072, 24590-LAB-M6-RLD-00001073, 24590-LAB-M6-RLD-00001074, 24590-LAB-M6-RLD-00001075, 24590-LAB-M6-RLD-00001076, 24590-LAB-M6-RLD-00001077, 24590-LAB-M6-RLD-00001078, 24590-LAB-M6-RLD-00001079, 24590-LAB-M6-RLD-00001080, 24590-LAB-M6-RLD-00001081, 24590-LAB-M6-RLD-00001082, 24590-LAB-M6-RLD-00001083, 24590-LAB-M6-RLD-00001084, 24590-LAB-M6-RLD-00001085, 24590-LAB-M6-RLD-00001086, 24590-LAB-M6-RLD-00001087, 24590-LAB-M6-RLD-00001088, 24590-LAB-M6-RLD-00001089, 24590-LAB-M6-RLD-00001090, 24590-LAB-M6-RLD-00001091, 24590-LAB-M6-RLD-00001092, 24590-LAB-M6-RLD-00001093, 24590-LAB-M6-RLD-00001094, 24590-LAB-M6-RLD-00001095, 24590-LAB-M6-RLD-00001096, 24590-LAB-M6-RLD-00001097, 24590-LAB-M6-RLD-00001098, 24590-LAB-M6-RLD-00001099, 24590-LAB-M6-RLD-00001100.

**REFERENCES:**

- WASTE DISPOSAL SYSTEM DESIGN DESCRIPTION

**HOLD/OPEN ITEMS:**

NONE

**REVISION HISTORY:**

REV	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	08/14/2008
2	ISSUED FOR CONSTRUCTION	08/14/2008

**PROJECT INFORMATION:**

PROJECT NO.	24590-LAB-M6-RLD-00001002
PROJECT NAME	RIVER PROTECTION PROJECT
CLIENT	2433 STEVENS CENTER PLACE
LOCATION	RICHLAND, WA 99354
DESIGNER	PERKINS+WILL
DATE	08/14/2008
SCALE	AS SHOWN
DATE PLOTTED	08/14/2008
PLT	24590-LAB-M6-RLD-00001002

**PROJECT TITLE:**

**P&ID - LAB RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM C5 COLLECTION AND TRANSFER RLD-PMP-00163A**

**SCALE:**

AS SHOWN

**DATE PLOTTED:**

08/14/2008

**PLT:**

24590-LAB-M6-RLD-00001002

**PROJECT NO.:**

24590-LAB-M6-RLD-00001002

**CLIENT:**

RIVER PROTECTION PROJECT

**LOCATION:**

2433 STEVENS CENTER PLACE

**DESIGNER:**

PERKINS+WILL

**DATE:**

08/14/2008

**SCALE:**

AS SHOWN

**DATE PLOTTED:**

08/14/2008

**PLT:**

24590-LAB-M6-RLD-00001002

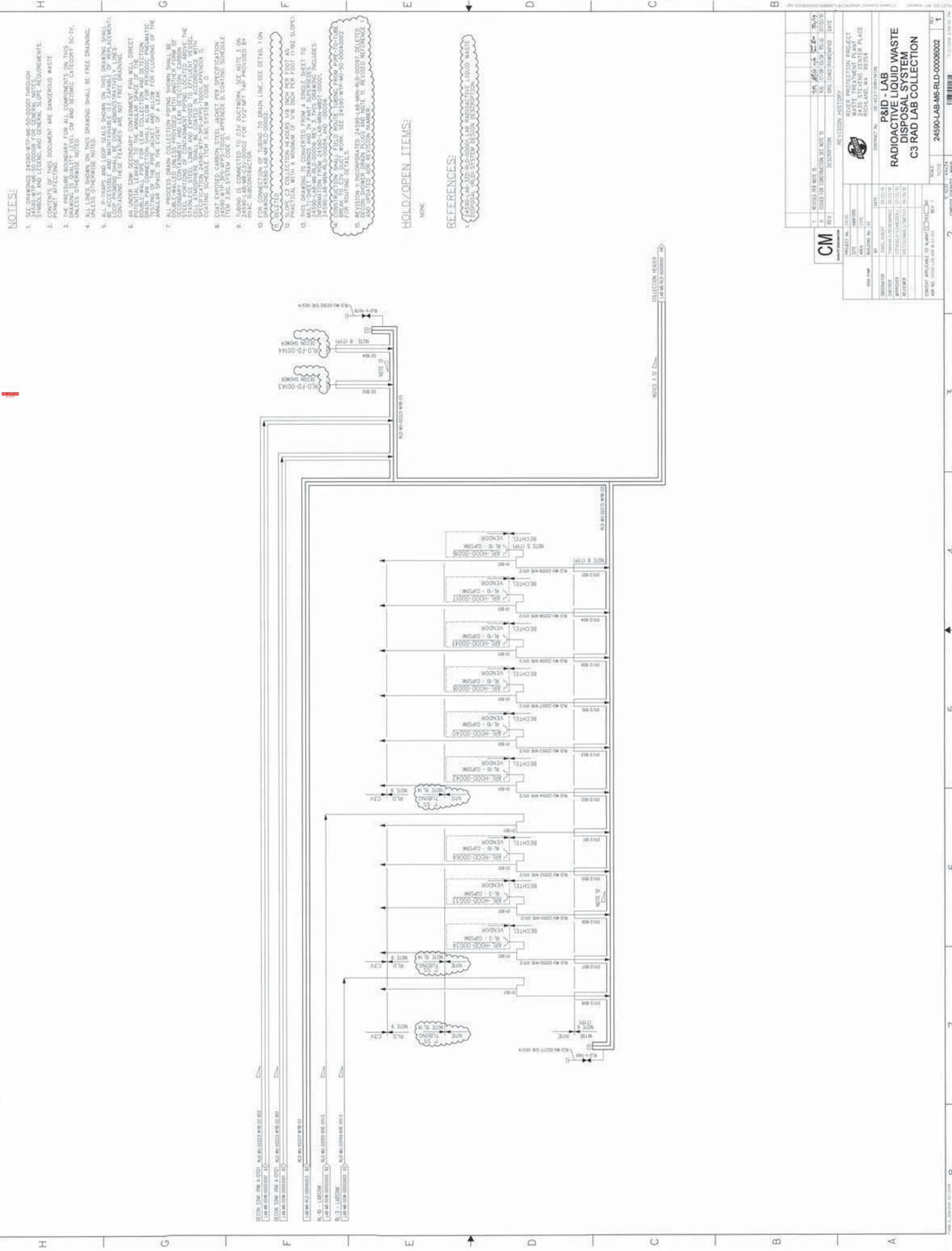












NOTES:

1. SEE DRAWING 24590-LAB-M6-RLD-00000001 FOR GENERAL NOTES.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE.
3. THE PRECISE DIMENSIONS FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEMI-CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE NOTED, DRAWING SHALL BE FREE DRAINING.
5. ALL P-TRAPS AND LOOP SEALS SHOWN ON THIS DRAWING SHALL BE CAPABLE AND MAINTAINABLE AS PART OF THE EQUIPMENT. CONTAINING THESE FEATURES ARE NOT FREE DRAINING.
6. AN UNDER-SINK SECONDARY CONTAINMENT PAN WILL DIRECT DOUBLE-WALL PIPE FOR LEAK COLLECTION AND DETECTION. TESTING OF THE PAN JACKET AND ALLOW FOR FILLING OF THE ANGLE SPICE IN THE EVENT OF A LEAK.
7. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH THE STEEL PORTION OF CONJANET PUBLIC LOCATION ABOVE THE STAINLESS STEEL UNIT AND EXPOSED TO EXHAUST VESSEL. SPECIFICATION 24590-WP-005-APP-1000, APPENDIX D.
8. COAT EXPOSED CARBON STEEL JACKET PER SPECIFICATION ITEM 3345 SYSTEM CODE D.
9. 24590-WP-005-APP-1000, APPENDIX D, COATING SCHEDULE.
10. 24590-WP-005-APP-1000, APPENDIX D, COATING SCHEDULE.
11. 24590-WP-005-APP-1000, APPENDIX D, COATING SCHEDULE.
12. PRACTICAL WITH A MINIMUM OF 1/8 INCH PER FOOT (1/82 SLOPE).
13. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO A 24590-LAB-M6-RLD-00000002 SET. THIS DRAWING INCLUDES 24590-LAB-M6-RLD-00000002 AND 24590-LAB-M6-RLD-00000003.
14. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 24590-WP-005-APP-1000, APPENDIX D, COATING SCHEDULE.
15. REVISION 2 INCORPORATED 24590-LAB-M6-RLD-00000002, SECTION SHOWER URINAL PLUGS AND NOTE 11 REVISED REFERENCE TO 24590-WP-005-APP-1000, APPENDIX D, COATING SCHEDULE.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 1. 24590-LAB-M6-RLD-00000001
- 2. 24590-LAB-M6-RLD-00000002
- 3. 24590-LAB-M6-RLD-00000003

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/27/20
2	ISSUE FOR PERMIT	10/27/20
3	ISSUE FOR PERMIT	10/27/20

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

REVISION HISTORY	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/27/20
2	ISSUE FOR PERMIT	10/27/20
3	ISSUE FOR PERMIT	10/27/20

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN

PROJECT NO.	24590
ISSUE NO.	00000002
DATE	10/27/20
SCALE	AS SHOWN
DESIGNER	TRAVIS W. BROWN
CHECKER	TRAVIS W. BROWN
APPROVER	TRAVIS W. BROWN
REVISOR	TRAVIS W. BROWN









This document has been digitally signed using the Electrosign process.

## Document for Signature

**Document Number:** 24590-LAB-PCN-ENV-19-003 **Rev:** NA

Participants	Signature	Completed	Status	Result	Comments
<b>Signers</b>	<b>9/8/2020 5:51 PM</b>				
Haggard, Robert		9/8/2020 6:54 PM	Completed	Approve	
<b>Final Approver</b>	<b>9/8/2020 6:54 PM</b>				
Haggard, Robert		9/14/2020 12:14 PM	Completed	Approve	

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## Hanford Facility RCRA Permit Modification Notification Forms

### Part III, Operating Unit 11 Integrated Disposal Facility

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#### Index

- Page 2 of 5: Unit Specific Conditions
- Page 3 of 5: Chapter 6.0, Procedures to Prevent Hazards
- Page 4 of 5: Addendum J.1, Pre-Active Life Contingency Plan
- Page 5 of 5: Revision Instructions

Submitted by Co-Operator:  
STEPHANIE JOHANSEN  
(Affiliate)

Digitally signed by STEPHANIE JOHANSEN  
(Affiliate)  
Date: 2020.11.19 09:11:46 -08'00'

Stephanie K. Johansen

11/19/2020

Reviewed by DOE Program Office:

**Duane Carter** Digitally signed by Duane Carter  
Date: 2020.11.19 09:25:44 -08'00'

Duane B. Carter

11/19/2020



<b>Hanford Facility RCRA Permit Modification Form</b>				
Unit: <b><i>Integrated Disposal Facility</i></b>	Permit Part <b><i>Part III, Operating Unit Group 11</i></b>			
<p><u>Description of Modification:</u></p> <p><b>Chapter 6.0, Procedures to Prevent Hazards</b></p> <p>Section 6.1 – Updated reference to Security attachment in the second sentence to read: “A discussion of Hanford Facility security is provided in Attachment 3.”</p> <p>Section 6.1.1.1 – Updated reference to Security attachment to read: “The Hanford Facility is a controlled-access area [refer to Attachment 3].”</p> <p>Section 6.3.3 – Deleted the first sentence that stated: “There is one building, MO-518, equipped to support communications.”</p>				
WAC 173-303-830 Modification Class Please mark the Modification Class:	Class 1	Class '1	Class 2	Class 3
		X		
<p>Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1., General Permit Provisions: Administrative and informational changes.</p>				
Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Reviewed by Ecology: Schleif, Stephanie (ECY)		
		<small>Digitally signed by Schleif, Stephanie (ECY) Date: 2020.11.23 12:44:10 -08'00'</small>		
		S. N. Schleif		Date

December 31, 2020

<b>Hanford Facility RCRA Permit Modification Form</b>				
Unit: <b><i>Integrated Disposal Facility</i></b>	Permit Part <b><i>Part III, Operating Unit Group 11</i></b>			
<p><u>Description of Modification:</u></p> <p><b>Addenda J.1, Pre-Active Life Contingency Plan</b></p> <p>Section J.4.6 – Revised first two sentences to remove reference to MO-518 to read: “The ICP for the IDF is MO-607. Emergency resource materials are stored at this location.”</p> <p>Section J.6 – Revised first sentence to remove reference to MO-518 to read: “A copy of this plan is maintained at MO-607.” Removed the two bullets after this sentence.</p> <p>Figure J.1 – Updated evacuation route figure to remove reference to MO-518.</p>				
WAC 173-303-830 Modification Class Please mark the Modification Class:	Class 1	Class '1	Class 2	Class 3
		X		
<p>Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1., General Permit Provisions: Administrative and informational changes.</p>				
Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Reviewed by Ecology: Schleif, Stephanie (ECY)		
		<small>Digitally signed by Schleif, Stephanie (ECY) Date: 2020.11.23 12:44:44 -08'00'</small>		
		S. N. Schleif	Date	

**Revision Instructions:**

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Revise Unit Specific Conditions, Chapter 6.0, and Addendum J.1 to incorporate the changes shown herein.

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## Hanford Facility RCRA Permit Modification Notification Forms

### Part III, Operating Unit 19 Capsule Interim Storage

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#### Index

- Page 2 of 5: Unit Specific Conditions
- Page 3 of 5: Proposed changes to Addendum J, "Contingency Plan"
- Page 4 of 5: Proposed changes to Addendum J, "Contingency Plan", continued
- Page 5 of 5: Instructions

Submitted by Co-Operator:  
**STEPHANIE JOHANSEN**  
 (Affiliate)

Digitally signed by STEPHANIE  
 JOHANSEN (Affiliate)  
 Date: 2020.10.07 10:25:10 -07'00'

Co-Operator Name

Date

Reviewed by DOE Program Office:  
**Duane Carter**

Digitally signed by Duane Carter  
 Date: 2020.10.07 12:51:55 -07'00'

DOE Program Office Name

Date

<b>Hanford Facility RCRA Permit Modification Form</b>				
Unit: <b>Capsule Interim Storage</b>	Permit Part <b>Part III, Operating Unit Group 19</b>			
<u>Description of Modification:</u>				
Unit Specific Conditions				
<b>LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 19</b>				
Addendum A	Part A Form			
Addendum B	Waste Analysis Plan			
Addendum C	Process Information			
Addendum D	Groundwater Monitoring - RESERVED			
Addendum E	Security			
Addendum F	Preparedness and Prevention			
Addendum G	Personnel Training			
Addendum H	Closure Plan			
Addendum I	Inspection Plan			
Addendum J	Contingency Plan, dated <b>TBD</b> 			
<div style="border: 1px solid black; background-color: yellow; padding: 5px; display: inline-block;"> <b>Change date to coincide with Ecology signature concurrence on the Class 1 modifications herein.</b> </div>				
WAC 173-303-830 Modification Class				
Please mark the Modification Class:				
	Class 1	Class '1	Class 2	Class 3
	X			
Enter relevant WAC 173-303-830, Appendix I Modification citation number:				
A.1., General Permit Provisions: Administrative and informational changes.				
Modification Concurred: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Reviewed by Ecology: Digitally signed by Schleif, Stephanie (ECY) Date: 2020.10.20 12:01:25 -07'00'		
		S. N. Schleif <span style="float: right;">Date</span>		

December 31, 2020

## Hanford Facility RCRA Permit Modification Form

Unit: <b><i>Capsule Interim Storage</i></b>	Permit Part <b><i>Part III, Operating Unit Group 19</i></b>
<p><u>Description of Modification:</u></p> <p>Update of Addendum J, “Contingency Plan” to address the responsibility of the Emergency Response Organization (ERO) during pre-active and active life. The Waste Encapsulation and Storage Facility (WESF) will be responsible for the Capsule Interim Storage (CIS) unit during pre-active life. The Canister Storage Building will be responsible for the CIS during active life. Other wording changes throughout Addendum J, “Contingency Plan” are updates to match current Building Emergency Plan (BEP) template wording.</p> <p>Minor editorial changes are included in redline/strike-outs, e.g., footnote numbers changed to superscript font; superfluous parentheticals deleted; capitalizations; punctuations; wording substitutions such as “agreement” changed to “arrangement”, “circumstance” changed to “event”, etc.</p> <p>The following changes have been made:</p> <ol style="list-style-type: none"> <li>1. Section 1.3 Updated owner’s mailing address from “2420 Stevens Center Plaza” to “PO Box 550”.</li> <li>2. Section 2.0 First sentence updated to match BEP template wording. <b>“This plan describes both the facility hazards and the actions that will be taken in response to upset and/or emergency conditions within the CSA.”</b></li> <li>3. Section 3.0 Updated last paragraph to read: “During pre-active life, the WESF ERO is responsible for implementing emergency response. During active life, the CSB ERO is responsible for implementing emergency response actions at the CSA.”</li> <li>4. Section 3.1 4th paragraph changed to bold font to indicate BEP template wording.</li> <li>5. 5th paragraph changed to read: <b>“CSA maintains a complete listing of current, qualified BEDs. The list is maintained in MO232 during pre-active life and 272HV during active life, collocated with this plan, and also contained in Permit Attachment 4A.”</b></li> <li>6. Section 4.0 Update Step 3 to match BEP template wording: <b>3. The emergency circumstance poses a threat to human health or the environment.</b></li> <li>7. Section 5.3 Update last sentence to read: “During pre-active life, the WESF will be responsible for the CSA. During active life, the CSB will be responsible for the CSA.”</li> <li>8. Section 7.1 Update section by adding new 3<sup>rd</sup> and 4<sup>th</sup> paragraphs to match BEP template wording.</li> </ol>	

Description of Modification:

9. Section 9.6

Update section by adding new 2<sup>nd</sup> sentence and updating beginning of 3<sup>rd</sup> sentence.

“During pre-active life, MO232 is the primary location of the initial command post. During active life, 272HV is the primary location of the initial command post.”

10. Section 12.0

Update section by adding new 1<sup>st</sup> sentence to read:

“MO232 is the initial command post for WESF during pre-active life.”

11. Update former 1<sup>st</sup> sentence to read:

“272HV is the initial command post for CSB during active life.”

12. Attachment A., Figure 1, CSA Primary and Alternate Staging Area

Update Figure 1, to show the location of the WESF initial command post at MO232.

13. Attachment B, RCRA APPLICABILITY MATRIX FOR THE TSD ACTIVITIES

Numerous changes to update regulatory wording to match agreed-upon template wording, i.e., to more exactly match the wording in WAC 173-303.

WAC 173-303-830 Modification Class	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number:

A.1., General Permit Provisions: Administrative and informational changes. Applies to items 1, 2, 4, 6, 8 and 13.

B.6.d., Contingency Plan: Changes in name, address, or phone number of coordinators or others persons or agencies identified in the plan. Applies to items 3, 5, 7, 9, 10, 11, and 12.

Modification Concurred: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Reviewed by Ecology: Digitally signed by Schleif, Stephanie (ECY) Date: 2020.10.20 12:01:57 -07'00'
	S. N. Schleif <span style="float: right;">Date</span>

**Revision Instructions:**

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Revise the Unit Specific Conditions and Addendum J to reflect the changes shown herein.