



U.S. Department of Energy

Hanford Field Office
P.O. Box 550
Richland, Washington 99352

May 12, 2025

25-ECD-0059

Ms. Stephanie Schleif
Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Schleif:

LOW-ACTIVITY WASTE PRETREATMENT SYSTEM/TANK-SIDE CESIUM REMOVAL SYSTEM, OPERATING UNIT GROUP 1, ANNUAL TANK-SIDE CESIUM REMOVAL ESTIMATED EMISSIONS OF TOTAL ORGANICS REPORT OF AP-108 RETURN AIR FOR CALENDAR YEARS 2022 AND 2023

The U.S. Department of Energy, Hanford Field Office is submitting the Low-Activity Waste Pretreatment System/Tank Side Cesium Removal System (TSCR), Operating Unit Group-1, Annual TSCR Estimated Emissions of Total Organics Report of AP-108 Return Air for Calendar Years 2022 and 2023 (Attachment 1). The estimated emissions of total organics report are to meet the requirements of Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, WA7890008967, "Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment Storage, and Disposal of Dangerous Waste," Condition III.1. N. 3.a.iii.

The estimated emissions of the total organics report are certified in accordance with Washington Administrative Code 173-303-810(12) and (13) as referenced in Permit Number WA7890008967 Standard Condition I.F (Attachment 2).

Ms. Stephanie Schleif
25-ECD-0059

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May 12, 2025

If you have any questions, please contact me, or you may contact Corey A. Low, Assistant Manager for Safety and Environment, at (509) 376-4820.

Sincerely,

**Brian A.
Harkins**

Digitally signed by Brian
A. Harkins
Date: 2025.05.12
09:38:32 -07'00'

Brian A. Harkins
Acting Manager

ECD:DBC

Attachments:

1. LAWPS/TSCU Total Organics Report
for CY 2022 and 2023
2. Certification Statement

cc w/attachs:

C. Buck, Wanapum
L. C. Buelow, EPA
L. Contreras, YN
S. L. Dahl-Crumpler, Ecology
D. R. Einan, EPA
E. Holbrook, Ecology
Y. V. Lucatero, Ecology
K. McCallum, BNI
M. R. Mullin, EPA
M. Murphy, CTUIR
M. Woods, ODOE
Administrative Record (TSD: TS-2-8)
Environmental Portal

Attachment 1
25-ECD-0059

TSCR Estimated Emissions of Total Organics
Report CY 2022 and 2023

(2 pages including cover sheet)

LAWPS/TSCR Annual Organics Estimated Emissions Reporting

Regulatory Requirement: Hanford Dangerous Waste Permit 8C, Permit# WA7890008967, Low-Activity Waste Pretreatment System (LAWPS) (OUG-1)

LAWPS/TSCR Unit-Specific Permit Condition III.1.N.3.a.i requires sampling the AP-108 air return to determine the total organics emission rate. Condition III.1.N.3.a.iii requires, in part, a report estimating emissions of total organics be submitted to Ecology on an annual basis. The table below is intended to fulfill Condition III.1.N.3.a.iii for CY 2022 and 2023.

VOC Mass Emission Results from AP-108 Air Return

Sampling Date	VOC (ppm)	Air flow (SCFM)	¹ Drying Time (hr.)	³ Emissions of VOC (lbs)
3-10-2022	1.8	62.67	58	0.045
2022 Total				0.045
1-27-2023	0.7	30.29	39	0.006
1-28-2023	1.1	30.98	34	0.008
7-15-2023	1.8*	31.5	36	0.014
7-21-2023	1.8*	31.6	² 47	0.018
10-30-2023	1.8	37.98	36	0.017
11-01-2023	1.7	38.84	33	0.015
2023 Total				0.078

* Concentration estimate based on yearly maximum

¹ Derived from PI Vision data unless otherwise noted

² Derived from procedure TO-270-700

³ Emissions (lbs) = (VOC) (MW) (Air Flow) (conversion constant) (Drying Time)

Where: VOC = VOC concentration in ppm

MW = Molecular weight of propane, 44.1 g/mole

Air Flow = in-line air flow in SCFM

$$\text{Conversion constant} = 1.557E - 7 = \frac{1 \text{ mole}}{24.06L} \times \frac{1 \text{ lb}}{453.6g} \times \frac{0.02832m^3}{1ft^3} \times \frac{60 \text{ min}}{1hr} \times \frac{1L}{1,000ml}$$

Equation converts parts per million (PPM) to pounds per hour (lbs/hr)

Note: Initial drying attempt in 2022 was through both IXC's at once. In 2023, operations dried IXC's one at a time, creating two sampling events for each change out cycle.

Attachment 2
25-ECD-0059

Certification for the Annual TSCR
Estimated Emissions of Total Organics Report of
AP-108 Return Air for CY 2022 and 2023

(3 pages including cover sheet)

**Certification
for the
LOW-ACTIVITY WASTE PRETREATMENT SYSTEM (LAWPS) TANK SIDE
CESIUM REMOVAL (TSCR) SYSTEM, OPERATING UNIT GROUP 1 (OUG-1),
Annual Organics Emissions Reporting of AP-108 Return Air for CY 2022 and 2023**

"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."

Brian A. Harkins Digitally signed by Brian A. Harkins
Date: 2025.05.12 09:43:05 -07'00'

Brian A, Harkins, Acting Manager
Owner/Operator
U.S. Department of Energy

Date

**Certification
for the
LOW-ACTIVITY WASTE PRETREATMENT SYSTEM (LAWPS)/TANK SIDE CESIUM
REMOVAL (TSCR) SYSTEM, OPERATING UNIT GROUP 1 (OUG-1), Annual
Organics Emissions Reporting of AP-108 Return Air for CY 2022 and 2023**

“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.”



Wesley H. Bryan, President & Project Manager
Washington River Protection Solutions LLC

12.17.2024

Date