FACT SHEET FOR CATEGORICAL STATE WASTE DISCHARGE PERMIT ST0004511

MISCELLANEOUS STREAMS

January 1, 2014

Purpose of the Fact Sheet

This fact sheet explains and documents the decisions that the Washington State Department of Ecology (Ecology) made in drafting the proposed Categorical State Waste Discharge Permit for Miscellaneous Streams on the Hanford Site. This permit will allow discharge of wastewater to the ground and to groundwaters of the state at various locations on the Hanford Site.

Ecology makes a draft permit and fact sheet available for public review and comment at least thirty (30) days before it issues a final permit to a facility owner/operator.

Copies of the fact sheet and draft permit for Categorical State Waste Discharge Permit ST0004511 are available for public review and comment from December 17, 2012, until the close of business February 1, 2013. For more details on preparing and filing comments about these documents, please see **Appendix B - Public Involvement Information.**

The Permittee, the United States Department of Energy – Richland Operations Office, reviewed this draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the location, history, wastewater discharges, or receiving water before publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and our response to them. Ecology will include our summary and response to comments to this fact sheet as **Appendix E – Response to Comments.** We will publish the Response to Comments when we issue the final Categorical State Waste Discharge Permit.

Summary

This Categorical State Waste Discharge Permit consists of four former State Waste Discharge Permits (ST4501, ST4508, ST4509, and ST4510). The process to permit a group of streams in one "Categorical permit" is based on an innovative agreement between Ecology and the Permittee. It is not based on Ecology Water Quality Program policy or on the *Implementation Guidance for the Ground Water Quality Standards*.

Categorical permits are unique to the Hanford Site cleanup, and are not used elsewhere in the state. The Categorical permits are intended to provide compliance with regulations while providing a streamlined and cost-effective permitting approach.

The wastewater discharges addressed in the draft permit include the discharge of hydrotesting, construction, and maintenance wastewater; the discharge of cooling water and condensate; and the collection and the discharge of industrial stormwater.

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1.0 INTRODUCTION

This Fact Sheet is a companion document to the draft Categorical State Waste Discharge Permit ST0004511. The Washington Department of Ecology (Ecology) proposes to re-issue the Categorical State Waste Discharge Permit to the Permittee, the United States Department of Energy – Richland Operations Office (USDOE-RL).

The Permit allows for the continued discharge of wastewater to the ground and groundwaters of Washington State. This Fact Sheet explains the nature of the proposed discharges, Ecology's decisions on limiting the pollutants in the wastewater, and the regulatory and technical basis for these decisions.

Washington State law (Revised Code of Washington [RCW] 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater is allowed to waters of the state. Regulations adopted by the state include procedures for issuing permits (Washington Administrative Code [WAC] 173-216), and water quality criteria for ground waters (WAC 173-200). They also establish requirements which are captured in individual permits.

This Fact Sheet and draft Permit are available for review by interested persons as described in Appendix B – Public Involvement Information.

2.0 GENERAL INFORMATION

Table 1 General Facility Information

Facility Information	
Applicant	United States Department of Energy Richland Operations Office P.O. Box 550 Richland, Washington 99352
Facility Name and Address	N/A: Miscellaneous Streams on the Hanford Site
Contact at Facility	Curt J. Clement Phone: 509-376-6223
Responsible Official	Matthew S. McCormick U.S. Department of Energy – Office of River Protections 825 Jadwin Street Richland, Washington 99352 Phone: 509-376-7395
Type of Treatment	None
SIC Codes	9999
NAIC Codes	562910
Type of Discharges	Hydrotest, Construction, Maintenance, Cooling, and Condensate water; Industrial Stormwater
Discharge Location	Hanford Site (all areas controlled by the Permittee)

Permit Status	
Issuance Date of Previous Permit	February 16, 2005
Application for Permit Submittal Date	August 19, 2009 and April 22, 2010
Date of Ecology Acceptance of Application	August 31, 2011

Inspection Status	
Date of last sampling inspection	N/A
Date of last non-sampling inspection	N/A

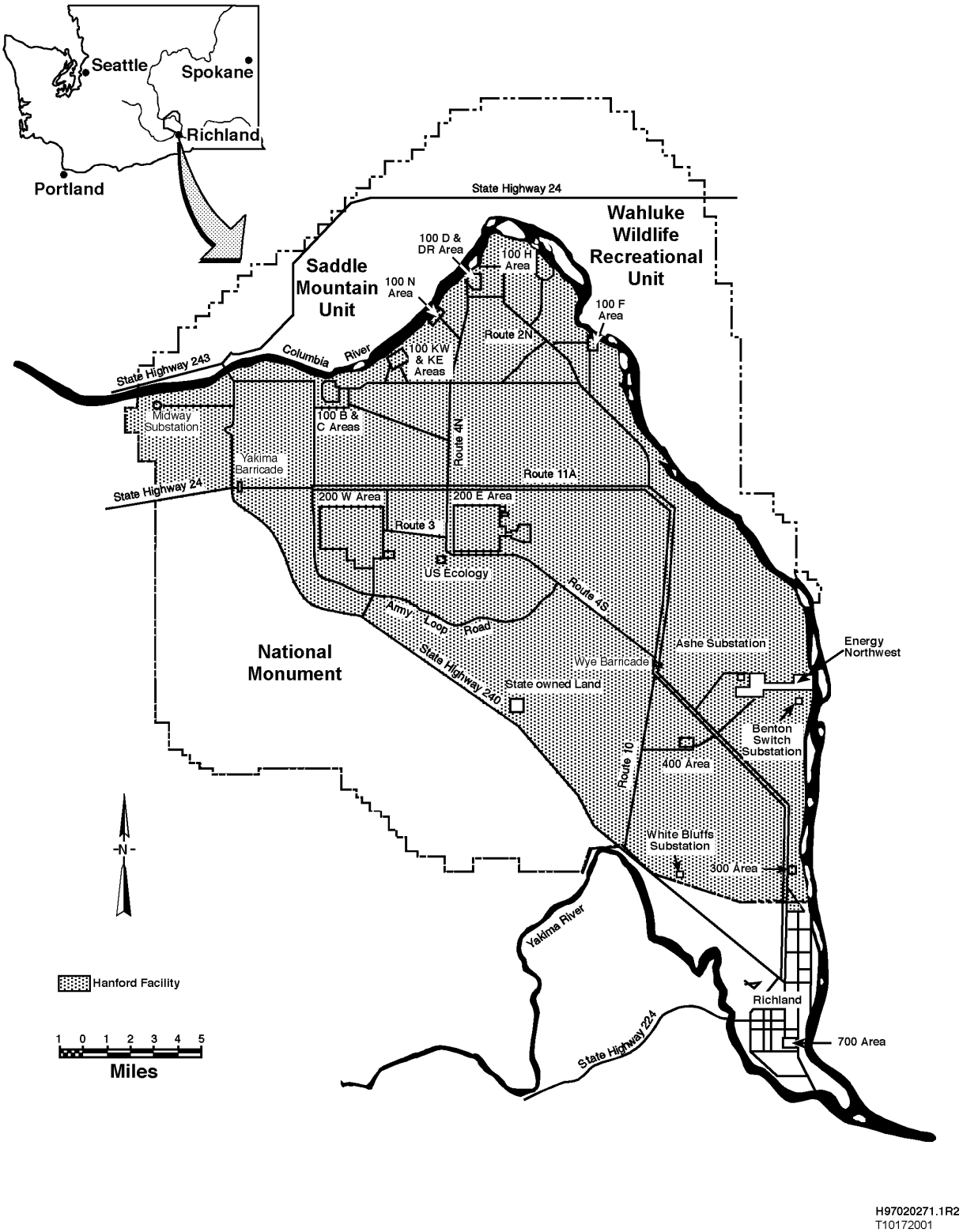

Figure 1 Facility Location Map

3.0 BACKGROUND INFORMATION

This Fact Sheet has been prepared as a companion document to the draft Categorical State Waste Discharge Permit ST0004511 for the Hanford Site.

This proposed Permit was originally issued for three previously issued categorical wastewater discharge permits. The Permittee proposed combining these three Categorical State Waste Discharge Permits to improve cost effectiveness and overall operational efficiencies. Ecology agreed that the three categorical permits be combined into a single permit.

The process to permit a group of streams in one "categorical permit" is based on an innovative agreement between Ecology and the Permittee. It is not based on Ecology Water Quality Program policy or on the *Implementation Guidance for the Ground Water Quality Standards*. Categorical permits are unique to the Hanford Site cleanup, and are not used elsewhere in the state. The Categorical permits are intended to provide compliance with regulations while providing a streamlined and cost effective permitting approach.

In keeping with this agreement, the Permittee prepared a permit renewal application that combined the wastewater streams identified in the three previously issued permits. On November 28, 2001, Ecology received the combined permit renewal application; *Documentation for Renewal of State Waste Discharge Permits ST 4508, ST 4509, and ST 4510* (DOE/RL-2001-60, Rev.0). Ecology reviewed the application and deemed it complete on April 29, 2002.

As a result of our review, Ecology instructed USDOE-RL to continue use of the existing permits until a new consolidated permit was issued. This consolidated permit, Categorical State Waste Discharge Permit ST0004511, was issued on February 16, 2005.

A fourth state wastewater discharge permit (ST 4501) has been incorporated into the proposed Categorical State Waste Discharge Permit ST0004511 because its discharge is of the same nature as other discharges allowed under this permit.. The discharge from ST4501 consists of air compressor condensate from the Maintenance and Storage Facility located in the 400 Area.

The following is a brief review of the background and events that led to the issuance of the categorical permits.

On December 23, 1991, the Permittee and Ecology agreed to adhere to the provisions of the Department of Ecology Consent Order No. DE 9INM-177 (Consent Order). The Consent Order listed regulatory milestones for liquid effluent streams on the Hanford Site and required compliance with the permitting requirements of WAC 173-216 or WAC 173-218, where applicable.

Hanford Site liquid effluent streams discharging to the soil column and groundwater were categorized in the Consent Order as Phase I Streams, Phase II Streams, and Miscellaneous Streams. Phase I and Phase II Streams were streams identified as contaminated or potentially contaminated. Miscellaneous Streams were liquid effluent streams discharged to the ground that were not categorized as Phase I or Phase II Streams.

Miscellaneous Streams discharging to the soil column and ground water on the Hanford Site were subject to the requirements of several milestones in the Consent Order. The *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams*, DOE/RL-93-94, Rev. 1 (Plan and Schedule) provided a schedule for the permitting of Miscellaneous Streams to satisfy one of the Consent Order requirements. This disposition of Miscellaneous Streams is based on compliance with:

- The *Hanford Federal Facility Agreement and Consent Order* (also called the Tri-Party Agreement)
- The Consent Order
- WAC 173-216
- WAC 173-218
- WAC 173-200
- RCW 90.48

4.0 DESCRIPTION OF WASTEWATER DISCHARGES

The wastewater discharges addressed in the draft Permit continue to include:

- Discharge of hydrotesting, construction, and maintenance wastewater.
- Discharge of cooling water and condensate.
- Collection and discharge of industrial stormwater.

Wastewater streams covered under the draft Permit include the following:

Hydrotest Discharges: Hydrotest discharges can be generated during hydrotesting of a system or component of a system, and during research and development testing. Research and development testing includes tracer studies and other types of experimental studies. Development testing can be performed to provide or develop design information, concepts, or criteria.

Maintenance Discharges: Maintenance discharges can be generated during routine drainage, flushing, and wash down activities, and from maintenance and testing. Routine drainage includes draining various filter basins, water tanks, sumps, pipe systems, and reservoirs in order to perform maintenance activities. Flushing includes activities related to the removal of dirt and debris from the inside of pipes and equipment and disinfecting potable water lines. Wash down includes activities related to the pressure washing of equipment and building surfaces for painting and/or resurfacing, the removal of salts and debris from roadways, and general building cleaning associated with window washing, etc.

Construction Discharges: Construction discharges can be generated during concrete curing, acid etching, and pressure washing. Discharges related to concrete curing include water spray used during the curing process. Pressure washing of surfaces before application of protective surface coats and the pressure cleaning of construction equipment including concrete trucks are included in this category of wastewater discharge streams.

Cooling Water Discharges: Cooling water discharges are generated from heat generating systems that use water to cool parts of the equipment. Cooling water from systems such as air compressors, diesel engines, air conditioning, evaporative cooling, and ice machines that are discharged to engineered structures are included in this draft Permit. The basis is documented in the Plan and Schedule that states a permit application is to be submitted for discharges on the cooling water and condensate "qualitative inventory." Qualitative inventory is described in the Plan and Schedule as discharges from a fixed location to an engineered disposal structure at a measurable flow rate.

Condensate Discharges: Condensate from heating, ventilation, and air conditioning systems, air compressors, and ice machines that discharge to an engineered structure are included in this draft Permit. The basis is documented in the Plan and Schedule that states a permit application is to be submitted for discharges on the cooling water and condensate "qualitative inventory." Qualitative inventory is described in the Plan and Schedule as discharges from a fixed location to an engineered disposal structure at a measurable flow rate.

Condensate that is not discharged to an engineered structure does not require permitting. Steam condensate from steam lines that do not discharge to a registered injection well under WAC 173-218 do require permitting and are included in this draft permit.

Water Tanks: Potable and raw water stored in water tanks is allowed to discharge to help eliminate mineral and bacteria buildup within the tanks and to prevent freezing.

Incidental Releases: Activities associated with operations and routine maintenance may result in small incidental releases of wastewater within the Hanford site boundaries (e.g., water skid maintenance and pump testing) that do not meet the location or distance limits specified in Permit Condition S4.A.1 or S4.A.2. These facility activities are subject to permit conditions identified in S7.C.1. These releases are addressed as a requirement in the Pollution Prevention, Best Management Practices (P2BMP) Plan. A revised P2BMP Plan will be due to Ecology for review and approval within 180 days following the effective date of the draft Permit (refer to Special Permit Condition S.5 of the draft Permit).

Waste Treatment Plant: This draft permit includes coverage for a potential Waste Treatment and Immobilization Plant (WTP) Balance of Facilities firewater discharge.

Significant damage to High Level Waste (HLW) and Low Activity Waste (LAW) melters and LAW pour caves could occur in the event of a loss of cooling water to those components.

A loss of site power (LOSP) would put these components in jeopardy of being without cooling water and subsequent damage. In the event of a LOSP, cooling water must be restored to the HLW and LAW melters within 15 minutes and to the LAW pour caves within 20 minutes to prevent significant damage to the melters and other equipment.

Firewater will be hard piped to the process cooling water supply lines to the heat exchangers of each cooling loop. This firewater will be used to provide necessary cooling in the event of a LOSP. The initial discharge of firewater, up to the first hour, can be returned to the Cooling Tower Facility through normal cooling water return lines. After the initial discharge, controlled discharges to storm drains immediately outside HLW and LAW facilities would be required. Discharge volumes are estimated at 205 gallons per minute (gpm) for the HLW facility and 900 gpm for the LAW facility.

A large number of the tanks and vessels being installed at the WTP require hydrotest discharge rates and volumes that will exceed Special Permit Condition S1.B.2 of the Permit. Special Permit Condition S7.E of the Permit was written to address the discharges resulting from the specific hydrotesting and flushing of these new tanks and vessels being installed at the WTP that are greater than 50,000 gallons in volume. The hydrotesting will be used to test the integrity of the newly installed tanks and vessels and their components under specific pressure conditions. Discharges related to flushing include washing dirt and construction debris from the inside of the tanks and vessels.

The discharges allowed under Special Permit Condition S7.E will be allowed on a case by case basis, if approved by Ecology. Ecology has no plans to allow these larger volumes of discharges after WTP operations commence.

Industrial Stormwater: Industrial stormwater is stormwater that is collected in an engineered structure or other impervious surface and directly associated with an industrial activity. The terms associated with this type of discharge are explained in the following:

Industrial Stormwater: The **s**tormwater discharge must have the potential to come into contact with an industrial activity or is collected within an area of industrial activity (i.e., one directly related to manufacturing, processing, or raw materials storage at an industrial plant).

Industrial Stormwater collected in an engineered structure: Industrial stormwater collected in an engineered structure such as a lined trench, basin, retention structure, secondary containment, tank, sump, roof, and other impervious surfaces directly associated with industrial activities.

Industrial Stormwater discharged to an engineered structure: Industrial stormwater discharged to an engineered disposal structure such as an injection well, dry well, catch basin, infiltration basin, infiltration trench, lined trench, or retention basin.

Spills are not covered under this draft Permit. Spills are regulated under *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) *of 1980* Part 40 Code of Federal Regulations (CFR) 302, *Resource Conservation and Recovery Act* (RCRA), and the State of Washington Department of Ecology *Dangerous Waste Regulations* Section WAC 173-303-145.

5.0 SITE DESCRIPTION

The Hanford Site covers approximately 1,450 square kilometers (560 square miles) of semiarid land that is owned by the United States Government and managed by the United States Department of Energy. The Hanford Site is located northwest of the City of Richland, Washington (Figure 1). The City of Richland adjoins the southeastern most portion of the Hanford Site boundary and is the nearest population center.

The Waste Treatment & Immobilization Plant (WTP) Project covers about 65 acres on the Hanford Nuclear Reservation. The WTP will process and immobilize the majority of Hanford's 56 million gallons of radioactive and chemical waste.

Activities on the Hanford Site are centralized in numerically designated areas. The 100 Areas, located along the Columbia River, contain deactivated reactors. The dangerous waste operating units (TSDs) are in the 200 Areas, which are on a plateau approximately 11 kilometers (7 miles) from the Columbia River. The 400 Area, 8 kilometers (5 miles) northwest of the 300 Area, contains the Fast Flux Test Facility previously used for testing liquid metal reactor systems. The 600 Area covers all locations not specifically given an area designation. Additional administrative offices are located in the 700 Area in downtown Richland.

The applicability of this draft permit is limited to activities conducted by USDOE and on their behalf by their contractors on the Hanford site in the areas designated in the previous paragraph.

6.0 PROPOSED CONDITIONS

The draft Permit and the conditions are written to control the discharge of miscellaneous wastewater on the Hanford Site. Ecology's main focus is to prohibit practices that could result in further contamination of the ground water and to avoid the movement and spread of existing Hanford Site contamination. These goals are achieved through the implementation of standard industrial P2BMPs that are included as conditions in the draft Permit. These conditions include discharge limitations, source water limitations, pollution prevention, and best management practice requirements. Furthermore, the proposed conditions that appear in this draft Permit are basically the same conditions that appeared in the previous permit.

Discharge limitations included in the draft Permit include maximum flow limits for most of the allowed discharges. Each hydrotest, maintenance, construction, cooling water, condensate, and miscellaneous discharge is limited to an annual average flow of 10 gallons per minute and an instantaneous maximum flow of 150 gallons per minute. In addition, the total discharge from all hydrotesting, construction, and maintenance discharges shall not exceed 500,000 gallons per day.

The total discharge from all cooling water, condensate, and miscellaneous discharges is limited to 100,000 gallons per day. These limits in the draft Permit are based on permit application information and agreements with the Permittee on the Hanford Site's scope of all of the identified categorical wastewater discharge streams.

Wastewater discharges that need permits and that have flows that are larger than these limits are not recognized or appropriate for this categorical permit. Those wastewater discharges will require a separate permit application request. This draft Permit does not require a flow measurement for any of the wastewater discharge streams identified above.

The draft Permit has wastewater discharge limitations on the contaminants in the wastewater that would have a discharge to the ground and groundwater. Each discharge is required to meet Ground Water Quality Criteria (GWQC) or not exceed 110% of the contaminant levels of the designated source water(s). If the discharge is expected to have a contaminant that exceeds the GWQC solely because the source water has a contaminant that exceeds one or more of the GWQC, it will not be required to meet GWQC.

Also, discharges that exceed the GWQC at the point of discharge but are prevented from impacting ground water quality are covered by this draft Permit.

One exception to this condition is for industrial stormwater. Industrial stormwater must meet the GWQC at the point of discharge. The draft Permit also contains discharge limitations on the source water. The source waters include: raw water from the Columbia River, treated or potable water from the Columbia River, raw ground water, treated ground water in the 400 Area, and demineralized water. The source waters are described in detail in the permit application (DOE/RL-2001-60, Rev. 0).

If new contaminants or levels of previously identified contaminants are found in the source water at or above the GWQC, the Permittee will notify Ecology. The Permittee will provide the new information on the contaminants to Ecology so that the new information can be reviewed and evaluated against the source water to help determine if this source water is usable, or if another action is needed. Ecology will make a determination and notify the Permittee of this determination.

The only source water for industrial stormwater discharges is precipitation. By definition, this source water meets WAC 173-200 GWQC and therefore only discharges that pick up contamination during the collection and disposal of industrial stormwater have the potential to exceed GWQC. Consistent with this definition, all industrial stormwater discharges shall not exceed GWQC.

The draft Permit includes a requirement to maintain and implement P2BMPs. The draft Permit lists basic P2BMPs that all discharges must follow. (Special Permit Condition S4). These basic or minimum P2BMPs include prohibitions against the discharge of wastewater in surface contaminated areas or near active or inactive contaminated disposal sites. The contamination could be from dangerous or hazardous waste and radioactive contaminants from Hanford Site past practices.

The 300 feet restriction specified in Special Permit Condition S4.B is based on Hanford Site information for the distance required between discharges so as to prevent the interaction or intermingling of the discharges with known contaminants. The 300 foot criterion is a recommended minimum separation distance for siting new cribs at the Hanford Site. It is considered a conservative distance based on collective experience at the Hanford Site from borehole drilling in the vicinity of liquid effluent disposal sites. Lateral spreading from adjacent liquid disposal sites greater than 300 feet apart has not been observed to impact either disposal stream.

These first two basic P2BMPs are meant to prevent wastewater discharges from moving existing contamination on the surface or within the soil column to greater depths. There are some existing streams that discharge within the 300 foot limit that have been determined to be acceptable for continued discharge. For example, stormwater in the 300 Area and some incidental small volume wastewaters generated during routine operations such as water skid maintenance and pump testing are considered acceptable within contaminated areas.

Special Permit Condition S4.A.4 requires the Permittee to make every effort to prevent ponding of wastewater discharges.

Special Permit Condition S4.A.5 encourages the use of onsite wastewater treatment facilities (Permitted 200 Area Effluent Treatment Facility) wherever possible

Special Permit Condition S4.D restricts the Permittee from discharging wastewater to the surface waters of the state or to any land that is not owned or under the control of the Permittee unless authorized by a state or federal discharge permit.

The draft Permit includes, in Special Permit Condition S5, a requirement that the Permittee must continue to implement a P2BMP Plan. This plan describes how discharges will be managed on the Hanford Site. All discharges are required to follow the P2BMPs listed in the plan. If appropriate P2BMPs are not included in the P2BMP plan for a particular wastewater discharge, that discharge is not covered by the draft Permit until the appropriate P2BMPs are added to the plan.

The Permittee has an approved P2BMP Plan (*Pollution Prevention and Best Management Practices Plan for State Waste Discharge Permit ST 4511* [DOE/RL-97-67, Rev.5]). It is appropriate to build on the elements from existing practices/activities that are applicable to the re-issued discharge Permit.

7.0 MONITORING AND REPORTING

The draft Permit requires monitoring and reporting for significant discharges. Significant discharges are defined in the draft Permit as a hydrotest, maintenance or construction discharge over 14,500 gallons in a 24 hour period and/or discharges over 50,000 gallons total in a calendar year. These significant discharges will be kept and recorded in a log by the Permittee. Information provided in the log will include:

- Type of discharge
- Date of discharge
- Discharge location, including a map showing the location of the discharge
- Source water
- Total volume of discharge
- Discharge rate and soil loading rate (discharge rate/area)
- Any additives
- Name of responsible person
- Any other pertinent information

The Permittee will submit the log to Ecology upon request. Smaller, less significant discharges will not be tracked because of the great number of discharges and the amount of effort it would take to track these discharges. These smaller discharges must still meet all P2BMPs required by the draft Permit.

The draft Permit does not require sampling and analysis of the source water or wastewater discharges. For the most part, the discharges are small, variable, and short-term. Sampling one discharge would tell little about the next discharge. Sampling all or most of the discharges would be prohibitively expensive.

The Permit application provided data to show that the source waters can meet the GWQC. The processes included in this permit are not expected to add significant pollutants to the source water, as long as the proper P2BMPs are followed. The potential to pollute the environment is low if the proper practices are followed. It is Ecology's position that the resources that would be used for sampling these discharges are better used elsewhere on the Hanford Site.

The draft Permit does not require monitoring and reporting of noncontaminated industrial stormwater discharges. No sampling and analysis of stormwater or industrial stormwater discharges is required, as long as a reasonable potential for contamination does not exist. The collection and discharge of industrial stormwater is not expected to add significant pollutants to the stormwater, as long as the proper P2BMPs are followed.

The exception to not sampling is when industrial stormwater is collected in a structure that is known to contain pre-existing contamination from past practices (Special Permit Condition S4.A.7).

Contaminated structures on the Hanford Site are common. Contamination could be from dangerous waste and hazardous substances and/or radioactive contaminants. The collection of industrial stormwater in these contaminated structures is to be avoided.

If collection does occur, the collected industrial stormwater must be field screened or sampled and analyzed for the contaminants of concern for that structure. If the industrial stormwater analysis does not show the contaminants of concern at levels of concern, the industrial stormwater may be discharged under this draft Permit.

If contamination is found, treatment of the industrial stormwater would be required before appropriate disposal. This treatment may mean sending the stormwater to the permitted 200 Area Effluent Treatment Facility (ETF) or another approved treatment facility. Treatment and discharge may also be possible under this draft Permit if the Permittee can show, through sampling and analysis that the industrial stormwater has been treated successfully and constituents are below the GWQC.

8.0 GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to groundwater permits issued by Ecology. The general conditions in this draft Permit have some slight differences from the standardized set. Two standard General Permit Conditions, *"Reporting a Cause for Modification"* and *"Plan Review Required,"* did not fit this draft Permit and are not included.

General Permit Condition G.1 requires responsible officials or their designated representatives to sign required permit submittals to Ecology.

General Permit Condition G.2 requires the Permittee to allow Ecology access to the treatment system, production facility, and records related to the Permit.

General Permit Condition G.3 specifies permit actions.

General Permit Condition G.4 prohibits the Permittee from using the Permit as a basis for violating any laws, statutes, or regulations.

General Permit Conditions G.5 and G.6 refer to Permit transfer and payment of fees.

General Permit Condition G.7 specifies the Permittee's duty to provide information.

General Permit Conditions G.8 and G.9 relate to the duty to comply and the prohibition of the discharge of removed substances.

General Permit Conditions G.10, G.11, and G.12 relate to record keeping requirements, noncompliance notification, and permit exemptions.

9.0 PERMIT STATUS

An application for renewal of State Waste Discharge Permit ST0004511 was submitted to Ecology on August 19, 2009 and April 22, 2010. The proposed draft Permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of Washington State. Ecology is proposing that this draft Permit be issued for five (5) years.

10.0 STATE ENVIRONMENTAL POLICY ACT (SEPA) COMPLIANCE

Based on RCW43.21C.0383, all existing wastewater discharge streams are exempt from Washington State Environmental Policy Act (SEPA) review. RCW 43.21C.0383 states, "The issuance, reissuance, or modification of a waste discharge permit that contains conditions no less stringent than federal effluent limitations and state rules is not subject to the requirements of RCW 43.21C.030(2)(c). This exemption applies to existing discharges only and does not apply to new source discharges."

RCW 43.21C is the State Environmental Policy statute. RCW 43.21C.0383 is the application of RCW 43.21C.030(2)(c) to waste discharge permits.

Discharges from WTP are included in this permit. A SEPA Checklist was completed for the Waste Treatment Plant Project in 2001 (*State Environmental Policy Act Environmental Checklist for the River Protection Project-Waste Treatment Plant*, 24590-WPT-RPT-ENV-01-011,).

11.0 RECOMMENDATION FOR PERMIT ISSUANCE

This proposed Permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control contaminants, and to protect human health and the beneficial uses of waters of the state of Washington. Ecology proposes that the Permit be issued for five years.

12.0 PERMIT MODIFICATIONS

This Permit can be modified in whole or in part by Ecology for such reasons as:

- Violations by the Permittee.
- Obtaining the Permit by misrepresentation or failure to disclose.
- Material change in type of waste disposal.
- Material change in the condition of the waters of the state.
- Promulgation or revisions of regulatory standards.
- Errors in best professional judgment on the part of the permit writer due to data limitations in existence at the time of Permit development.

The Permittee also can request permit modifications which Ecology can accept, accept with modifications, or deny.

13.0 EXEMPTION OF INTERIM BARRIERS

Interim barriers are being built over select Hanford tank farms located in the 200 Area. The barriers are designed to reduce impacts to groundwater from the single-shell tank (SST) leaks or spills. The infiltration of rain and snow melt is thought to be the primary driver in moving the contaminant plumes downward toward the water table. Interim barriers reduce the infiltration of precipitation and snow melt into the contaminated soil zone, thus decreasing the downward movement of contaminants.

To dispose of the rain water and snow melt collected on the interim barrier, an evapotranspiration basin is also constructed. The evapotranspiration basins are lined with an impermeable membrane. A pipe carries runoff from the interim surface barrier to the evapotranspiration basins. A drainage grid of perforated pipe within the basin distributes the runoff collected from the interim surface barrier to a gravel layer. The gravel layer is overlain with a soil layer which has been planted with native grasses. Natural evaporation through the soil, along with transpiration of native grasses planted in the basin, removes the collected waster, preventing it from infiltrating into the vadose zone.

Ecology has determined that because the evapotranspiration basins do not meet the criteria of condition S1.A.3, Industrial Stormwater Discharges, coverage under this permit is not required. As defined in WAC 173-216-030(19)(b), the evapotranspiration basins do not receive discharges of stormwater that is contaminated or potentially contaminated by industrial or commercial sources. Therefore, runoff from the interim barriers does not meet the definition of waste materials. In addition, the basins are lined with an impermeable membrane and vegetated with native plants capable of removing accumulated moisture from the upper and lower areas of the soil column within the basin. Therefore, by design, there is no discharge to the soil column.

This permit does not give a blanket exemption to all interim barriers. Ecology will evaluate each new interim barrier proposed to be included in this permit on a case-by-case basis. Ecology will make a determination to include or not include any future interim barrier in the Permit.

To ensure the evapotranspiration basins continue to operate as designed, inspection and maintenance activities are performed by the Permittee including ensuring drains and filters are clear of debris, stabilization of rock on side slopes, and general housekeeping (i.e., clearing the area of windblown tumbleweeds).

APPENDIX A - REFERENCES

Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams, U.S. Department of Energy, Richland, Washington, DOE/RL-93-94, Revision 1.

Pollution Prevention and Best Management Practice Plan for State Waste Discharge Permits ST 4511, U.S. Department of Energy, Richland, Washington, DOE/RL-97-67, Revision 5.

Water Quality Standards for Ground Waters of the State of Washington, Chapter 173-200 WAC.

State Waste Discharge Permit Program, Chapter 173-216 WAC.

Underground Injection Control Program, Chapter 173-218 WAC.

Washington State Law, RCW 90.48.

Consent Order No. DE-91 NM-177 for the Permitting of Liquid Effluents Discharges Under the Washington Administrative Code (WAC) 173-216, December 23, 1991.

State Waste Discharge Permit Number ST 4511, Washington State Department of Ecology, issued February 2005.

State Waste Discharge Permit Number ST 4501, Washington State Department of Ecology, issued October 2003.

Documentation for Renewal of State Waste Discharge Permits ST 4508, ST 4509, and ST 4510, U.S. Department of Energy-Richland Operations, Richland Washington, (DOE/RL2001-60, Rev.0), November 2001.

Hanford Federal Facility Agreement and Consent Order, Washington State Department of Ecology, U. S. Environmental Protection Agency, U. S. Department of Energy – Richland Operations Office, Olympia Washington, 1994, amended periodically

Application of Renewal for State Waste Discharge Permit ST 4511 (09-EMD-0116), August 2009.

Supplemental Information for State Waste Discharge Permit ST 4511 Permit Application (10-EMD-0064), April 2010.

APPENDIX B - PUBLIC INVOLVEMENT INFORMATION

Ecology proposes to reissue a permit for Miscellaneous Streams on the Hanford Site. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology will place a Public Notice of Draft on December 16, 2012 and December 23, 2012 in the Tri-City Herald to inform the public and to invite comment on the proposed draft Categorical State Waste Discharge permit and fact sheet.

The notice:

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on the Ecology website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Invites people to submit their comments, in writing, before the end of the Comment Period.
- Tells how to request a public hearing of comments about the proposed state waste discharge permit.
- Explains the next step(s) in the permitting process.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting*, which is available on the Ecology website at http://www.ecy.wa.gov/biblio/0307023.html.

Further information may be obtained from Ecology by telephone, 509-372-7917, or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99354

The primary author of this permit and fact sheet is Stacy Nichols.

APPENDIX C - GLOSSARY OF TERMS

Activity: Any site, area, facility, structure, vehicle, installation, or discharge which may produce pollution.

Best Management Practices (BMPs): - Administrative actions taken to prevent the discharge of pollutants. Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State.

BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

Construction Activity: Clearing, grading, excavation, and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Cooling Water and Condensate Discharge: Cooling water discharges are generated from heat generating systems that use water to cool parts of the equipment.

Condensate Discharges: Condensate discharges from heating, ventilation, and air conditioning systems, air compressors, and ice machines that discharge to an engineered structure.

Criteria: The numeric values and the narrative standards that represent contaminant concentrations which are not to be exceeded in the receiving environmental media (surface water, ground water, sediment) to protect beneficial uses.

Fact Sheet: A document prepared and issued with every permit which summarizes the activities and decisions on the permit and tells how the public may comment.

Ground Water Quality Criteria (GWQC): Refers to Water Quality Standards for Ground water as listed in Table I of Chapter 173-200 WAC.

Industrial Activity: A manufacturing process that results in the conversion of a natural resource into goods and services. On the Hanford Site, this is limited to those facilities that were directly related to the processing and conversion of defense related material.

Industrial Wastewater: Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade, or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Industrial Stormwater: A stormwater discharge with the potential to come into contact with an industrial activity or that is collected within an area of industrial activity (i.e., one directly related to manufacturing, processing, or raw materials storage at an industrial plant).

Owner and Operator: For this Permit and Fact Sheet, both the owner and the operator refer to the U.S. Department of Energy.

Parties of Record: People who have indicated an interest in a particular permit during the public notice of application and are kept informed of progress of the permit.

Pollutant: Dredged soil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Pollution Prevention and Best Management Practices (P2BMPs): Pollution Prevention (P2) - Source reduction; or protection of natural resources by conservation; or increased efficiency in the use of raw materials, energy, water or other resources.

Runoff: Water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands as well as ground water.

Significant Discharge: Any single discharge that exceeds 14,500 gallons in a 24 hour period or any single discharge that exceeds 50,000 gallons total in a calendar year from hydrotesting, maintenance, and construction wastewater discharges.

Source Reduction: Any practice which eliminates or reduces the amount or use of hazardous substances, pollutants, or contaminants that enter a waste stream or are released into the environment, including fugitive emissions, prior to any recycling, treatment, or disposal; and thereby reduces adverse public health and environmental effects associated with the release of such substances, pollutants, or contaminants.

Spill: A spill is defined in this permit and Fact Sheet as an accidental or unintentional release of a contained substance.

State Waste Discharge Permit: A wastewater discharge permit issued under state authority (Chapter 90.48 RCW) to control the discharge of pollutants to waters of the state. Generally issued for discharges to ground water and for industrial discharges to a municipal sewage system when that municipal system does not have a pretreatment program.

State Waters: Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater: That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body or a constructed infiltration facility.

Upset Condition: For the purposes of this Permit and the Hanford Site, "upset condition" means an exceptional incident in which there is a wastewater discharge that exceeds the limitations of this Permit, resulting from factors beyond the reasonable control of the Permittee.

APPENDIX D - LIST OF MISCELLANEOUS STREAMS

Appendix D includes a listing of the miscellaneous discharges at the Hanford Site as of the date of the preparation of the permit application. The number, volume, and location of discharges are anticipated to change as activities and needs change.

Any of the discharges authorized by ST0004511 may be conducted anywhere on the Hanford Site pursuant to the terms and conditions identified in Permit ST0004511.

100 Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	100K Water Treatment Plant	Several	500,000 to 2,000,000	No
Research and Development Testing	Varies	Varies	Varies	Groundwater tracers or other chemicals either approved by Ecology or meeting GWQC are used (MSDS available upon request by Ecology)
Other Experimental Discharges	NA	NA	NA	NA
Maintenance				
Drainage	NA	NA	NA	NA
Flushing	100K Water Treatment Plant	24	216,000	No
Wash Down Activities (window and building washings, cleaning air conditioning unit coils, preparation for painting, road and equipment washings)	NA	NA	NA	NA
Construction				
Concrete Curing	100K Water Treatment Plant	Several	100,000	No
Concrete Cutting	100K Water Treatment Plant	Several	100,000	No
Pressure Washing	100K Water Treatment Plant	Several	100,000	No

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structure	NA	NA	NA	NA
Air Compressors discharging to an engineered structure	NA	NA	NA	NA
Ice Machines discharging to an engineered structure	NA	NA	NA	NA
Steam Condensate	NA	NA	NA	NA
Miscellaneous				
Water Tank Overflows	NA	NA	NA	NA
Incidental Releases	NA	NA	NA	NA
Industrial Stormwater	NA	NA	NA	NA

GWQC Groundwater Quality Criteria

HVAC Heating, Ventilation, and Air Conditioning

MSDS Material Safety Data Sheet

NA No Discharges are currently projected or recently documented; however, future discharges may be possible.

200 East Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	200 Areas; adjacent or within a tank farm (new pipelines prior to use)	1-50	5,000	No
Research and Development Testing	200 Areas; Adjacent or Within a Tank Farm	3-5	<1,000	No
Other Experimental Discharges	NA	NA	NA	NA
Maintenance				
Drainage	Retention pond	As needed	100,000	No
Flushing (Drinking Water Line Flushing included on the Log of Significant Discharges)	Effluent Treatment Facility (ETF)	52	1560	No
	200 Areas; adjacent or within a tank farm (raw water supply to a tank farm)	30-50	~5,000	Chlorine for some, none for others
	Retention pond	As needed	50,000	No
Wash Down Activities (window and building washings, cleaning air conditioning unit coils, preparation for painting, road and equipment washings)	2101M	6	720	No
	Building Washing at 2750-E and 2704-HV	Twice per year per building	~1,000	No
	225B-BA 283E-BA 242A-BA	2	<1,000 each facility	
Construction				
Concrete Curing	200 Areas Tank Farms	Several	~5,000	No
Concrete Cutting	NA	NA	NA	NA
Pressure Washing Activities	NA	NA	NA	NA

Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structures	ETF	Intermittent	1000	De-scalar and biocide chemical
Air Compressors discharging to an engineered structure	NA	NA	NA	NA
Ice Machines discharging to an engineered structure (2 Ice Machines)	2101M	1	1825	No
Steam Condensate	NA	NA	NA	NA
Miscellaneous				
Water Tank Overflows	200 Areas Tank Farms	~2	<300	No
Incidental Releases	See Permit for discharges from Waste Treatment and Immobilization Plant	See Permit for discharges from Waste Treatment and Immobilization Plant	See Permit for discharges from Waste Treatment and Immobilization Plant	See Permit for discharges from Waste Treatment and Immobilization Plant
	200 Areas Tank Farms	300	~5000	No
Industrial Stormwater	NA	NA	NA	NA

NA No discharges are currently projected or recently documented; however, future discharges may be possible

HVAC Heating, Ventilation, and Air Conditioning

200 West Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	WRAP	100	100	No
Research and Development Testing	Varies	Varies	Varies	Groundwater tracers or other chemicals either approved by Ecology or meeting GWQC were used (MSDS available upon request)
Other Experimental Discharges	Varies	2	1	No
Maintenance				
Drainage	Cutting and Capping of Steam and Water Lines (may occur in 200 East and 600 Areas)	~1	~1000	No
Flushing (Drinking Water Line Flushing included in Log of Significant Discharges)				No
Wash Down Activities (Window and building washing, cleaning air conditioning unit coils, preparation for painting, road and equipment washing)	MO-279 222S-BA 234-5Z –BA 234-5Z-BE 283W-BA	2	<1000 each facility	
Construction				
Concrete Curing	NA	NA	NA	NA
Concrete Cutting	NA	NA	NA	NA
Pressure Washing Activities	NA	NA	NA	NA
Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structure	NA	NA	NA	NA
Air Compressors discharging to an engineered structure	NA	NA	NA	NA

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Ice Machines discharging to an engineered structure	NA	NA	NA	NA
Steam Condensate	NA	NA	NA	NA
Miscellaneous				
Water Tank Overflows	NA	NA	NA	NA
Incidental Releases	NA	NA	NA	NA
Industrial Stormwater	NA	NA	NA	NA

GWQC Groundwater Quality Criteria

MSDS Material Safety Data Sheet

NA No discharges are currently projected or recently documented; however, future discharges may be possible

WRAP Waste Receiving and Processing Facility

300 Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	Within 300 Area	~2/year	<2000	No
Research and Development Testing	Varies	Varies	200-35,000	Groundwater tracer or dyes, either approved by Ecology or meeting Groundwater Quality Criteria were used. (MSDS available upon request)
Other Experimental Discharges	NA	NA	NA	NA
Maintenance				
Drainage	Within 300 Area	2	<1000 each	No
Flushing	Within 300 Area	3	<500	No
Wash Down Activities (window and building washing, cleaning air conditioning unit coils, preparation for painting, road and equipment washing)	Within 300 Area	5	Maximum 10,000 gallons over 3 days	No
	Within 300 Area	5 building washings	Maximum 10,000 gallons over 3 days	No
	MO-258 MO-262 MO-263 318BA 320BA 323BA 324BA 325BA 326BA 331BA 382BA	2	<1000 each facility	No
Construction				
Concrete Curing	Within 300 Area	1	<100	No
Concrete Cutting	Within 300 Area	1	<100	No
Pressure Washing Activities	NA	NA	NA	NA

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structure	NA	NA	NA	NA
Air Compressors discharging to an engineered structure	NA	NA	NA	NA
Ice Machines discharging to an engineered structure	NA	NA	NA	NA
Steam Condensate	Within 300 Area	2	<50	No
Miscellaneous				
Water Tank Overflows	NA	NA	NA	NA
Incidental Releases	Within 300 Area	~5	<50	No
Industrial Stormwater	NA	NA	NA	NA

Ecology Washington State Department of Ecology

HVAC Heating, Ventilation, and Air Conditioning

MSDS Material Safety Data Sheet

NA No discharges are currently projected or recently documented; however, future discharges may be possible.

400 Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	NA	NA	NA	NA
Research and Development Testing	MASF	Varies	90,000	Yes
Other Experimental Discharges	NA	NA	NA	NA
Maintenance				
Drainage	NA	NA	NA	NA
Flushing	FFTF Water Treatment Plant	24	9000	No
Wash Down Activities (window and building washing, cleaning air conditioning unit coils, preparation for painting, road and equipment washing)	NA	NA	NA	NA
Construction				
Concrete Curing	NA	NA	NA	NA
Concrete Cutting	NA	NA	NA	NA
Pressure Washing Activities	NA	NA	NA	NA
Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structures	NA	NA	NA	NA
Air Compressors discharging to an engineered structure (1)	4608 B & C Perc Ponds	Continuous	303,000	NA
Ice Machines discharging to an engineered structure	NA	NA	NA	NA
Steam Condensate	NA	NA	NA	NA

Miscellaneous				
Water Tank Overflows	NA	NA	NA	NA
Incidental Releases	NA	NA	NA	NA
Industrial Stormwater	NA	NA	NA	NA

FFTF Fast Flux Test Facility

HVAC Heating, Ventilation, and Air Conditioning

NA No discharges are currently projected or recently documented; however, future discharges may be possible.

MASF Maintenance and Storage Facility

600 Area Discharges

Activities Generating Discharges	Discharge Location	Number of Discharges per year	Estimated Volume Gallons/Year	Potential for Discharge to Come in Contact with Chemicals? [If yes, list the chemical(s)]
Hydrotesting				
System or Component Testing	NA	NA	NA	NA
Research and Development Testing	NA	NA	NA	NA
Other Experimental Discharges	NA	NA	NA	NA
Maintenance				
Drainage	NA	NA	NA	NA
Flushing	251W	Continuous	~450,000	NA
Wash Down Activities (Window and building washing, cleaning air conditioning unit coils, preparation for painting, road and equipment washing)	NA	NA	NA	NA
Construction				
Concrete Curing	NA	NA	NA	NA
Concrete Cutting	NA	NA	NA	NA
Pressure Washing Activities	NA	NA	NA	NA
Cooling Water/ Condensate				
HVAC Systems discharging to an engineered structure	NA	NA	NA	NA
Air Compressors discharging to an engineered structure	NA	NA	NA	NA
Ice Machines discharging to an engineered structure	NA	NA	NA	NA
Steam Condensate	NA	NA	NA	NA
Miscellaneous				
Water Tank Overflows	NA	NA	NA	NA
Incidental Releases	NA	NA	NA	NA
Industrial Stormwater	NA	NA	NA	NA

HVAC Heating, Ventilation, and Air Conditioning

NA No Discharges are currently projected or recently documented; however, future discharges may be possible.

APPENDIX E - RESPONSE TO COMMENTS

DEPARTMENT OF
ECOLOGY
State of Washington

Response to Comments

Miscellaneous Streams

Waste Discharge Permit

December 17, 2012 – February 1, 2013

Summary of a public comment period and responses to comments

January 2014
Publication no. 13-05-020

Publication and Contact Information

This publication is available on the Department of Ecology's website at http://www.ecy.wa.gov/biblio/nwp.html

For more information contact:

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Phone: 509-372-7950
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Washington State Department of Ecology - www.ecy.wa.gov

- Headquarters, Lacey 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Lacey 360-407-6300
- Central Regional Office, Yakima 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

If you need this document in a format for the visually impaired, call the Nuclear Waste Program at 509-372-7950. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Response to Public Comments

Miscellaneous Streams
Waste Discharge Permit
December 17, 2012 – February 1, 2013

Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, WA 99354

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INTRODUCTION

The Washington State Department of Ecology requires industrial facilities in the state to have a permit before discharging waste or chemicals to the waters of the state, including groundwater. When a new permit or a significant change to an existing permit is proposed, we hold a public comment period to allow the public to review the change and provide formal feedback.

The Response to Comments is the last step before issuing the final permit, and its purpose is to:

- Specify which provisions, if any, of a permit will become effective upon issuance of the final permit, providing reasons for those changes.
- Describe and document public involvement actions.
- List and respond to all significant comments received during the public comment period and any related public hearings.

This Response to Comments is prepared for:

Comment period:	December 17, 2012 – February 1, 2013
Permit:	*Categorical State Waste Discharge Permit, ST0004511*
Original issuance date:	February 16, 2005
Draft effective date:	January 1, 2014

To see more information related to the Hanford Site or nuclear waste in Washington, please visit our website: www.ecy.wa.gov/programs/nwp.

REASONS FOR ISSUING THE PERMIT

This Categorical State Waste Discharge Permit consists of four former State Waste Discharge Permits (ST4501, ST4508, ST4509, and ST4510). We have added a fourth state wastewater discharge permit ST 4501 into the proposed Categorical State Waste Discharge Permit because its discharge is of the same nature as other discharges allowed under this permit.

The process to permit a group of streams in one "Categorical permit" is based on an agreement between Ecology and the Permittee (the U.S. Department of Energy, or USDOE). It is not based on Ecology Water Quality Program policy or on the *Implementation Guidance for the Ground Water Quality Standards*.

Categorical permits are unique to Hanford Site cleanup and are not used elsewhere in the state. The Categorical permits are intended to provide compliance with regulations while providing a streamlined and cost-effective permitting approach. It allows us to know about all water discharges at Hanford.

The wastewater discharges addressed in the draft permit include the discharge of hydrotesting, construction, and maintenance wastewater; the discharge of cooling water and condensate; and the collection and the discharge of industrial stormwater. The discharge from ST4501 consists of air compressor condensate from the Maintenance and Storage Facility in Hanford's 400 Area.

PUBLIC INVOLVEMENT ACTIONS

The Nuclear Waste Program encouraged public comment on the Miscellaneous Streams Waste Discharge Permit during a public comment period held December 17, 2012, through February 1, 2013. Regulations call for a 30-day comment period. Since this comment period was during the December holiday season, we extended the comment period to run for 47 days.

Ecology took the following actions to announce the public comment period:

- Mailed a public notice to 799 interested members of the public.
- Placed a public announcement legal classified advertisement in the *Tri-City Herald* on December 16, 2012.
- Sent a notice announcing the start of the comment period to the Hanford-Info email list, which had 1,015 recipients in December.
- Posted the comment period as an event on Ecology's Hanford Education & Outreach Facebook page.

The public information repositories located in Richland, Spokane, and Seattle, Washington and Portland, Oregon, received the following:

- Public notice
- Transmittal letter
- Statement of Basis
- Draft reissued permit

The following public notices for this comment period are in Appendix A of this document:

1. Public notice
2. Classified advertisement in the *Tri-City Herald*
3. Notice sent to the Hanford-Info email list
4. Event posted on Ecology Hanford Education & Outreach Facebook page

RESPONSE TO COMMENTS

Ecology accepted comments from December 17, 2012, through February 1, 2013. This section provides the comments that we received during the public comment period and our responses. (RCW 34.05.325(6)(a)(iii))

Columbia Riverkeeper

I. Impact of Discharging Over 2.1 Million Gallons of Water per Day

Question: What is the 2.1 MGD limit based on, and what are the environmental consequences of discharging that much water on a daily basis for the five year life of the permit?

Response: *The limit is based on the initial permit application. USDOE has never approached the 2 million gallon per day limit, and had significant discharges on only five days in the last three years. Since it is unlikely that USDOE will ever discharge this much water in one day, we have lowered this limit to 500,000 gallons per day.*

Question: What evidence does Ecology have that the 10 gallon per minute rate adequately protects groundwater from the uniquely dangerous contaminates found at Hanford?

Response: *The requirement to discharge less than 10 gpm averaged annually is based on criteria set in WAC 173-216-050(f). This states that domestic wastewater from a septic system discharging less than or equal to 14,500 gallons per day (about 10 gpm) to the soil is not subject to the state waste discharge permitting requirements.*

This limit is for domestic wastewater from a septic system, and the water being discharged at Hanford is mainly from hydro testing, maintenance, and construction discharges using Columbia River or potable water sources. These sources are not the same, but they are somewhat alike. We believe all single discharges less than 14,500 gallons per day have no significant potential to adversely affect the ground water.

USDOE keeps a Log of Significant Discharges, which tracks all permitted discharges over 14,500 gallons per day. During the past three years, there have been a total of five significant discharges. The largest was a 300,000 gallon discharge of raw water to stormwater ponds. The next largest was 22,750 gallons at an average rate of 0.05 gpm.

II. Ecology Should Require the Department of Energy to Test for Soil Contamination Before Discharging Large Volumes of Water.

Question: For large discharges like hydrostatic testing discharges, waterline flushing, and "significant discharges" as defined in Section S6.A of the Permit, why isn't Ecology requiring the Department of Energy to test for soil contamination before dumping thousands of gallons of water?

Response: *All discharges are where there is no, or very low, soil or groundwater contamination, so there is no significant threat of mobilizing contaminants.*

Discharges that are somewhat continuous (condensate from equipment, ice makers, chillers, etc.) are extremely small and usually evaporate before infiltrating any significant distance in the soil. Larger discharges such as flushing drinking water lines

or hydro-testing are infrequent and intermittent, and they do not occur in the same location.

Also, Best Management Practices (BMPs) are followed before and during each discharge. BMPs are schedules of activities, prohibited practices, maintenance procedures, and other management practices to prevent or reduce the pollution of groundwater of the state.

The BMPs that satisfy the requirements of ST4511 include good housekeeping, preventive maintenance, inspections, training, and following a checklist to ensure discharges are not occurring in contaminated areas.

III. Ecology Should Restrict Where the Department of Energy Discharges Wastewater.

Question: What is a "surface contaminated area"? For example, is a single-walled tank a surface contaminated area? Alternatively, is a surface contaminated area the entire central plateau?

Response: *Surface contaminated areas are defined as those soils contaminated with dangerous or radioactive wastes. All surface contamination areas at Hanford have been identified, posted, and are tracked in a database system. The entire central plateau would not be considered a surface contaminated area as only a small percentage of the area has surface contamination, or has contamination in the soil.*

Question: Why is there no 300 foot buffer around "surface contaminated areas"?

Response: *Discharges do not occur within surface contaminated areas, and water is not allowed to pond. Preventing the water from ponding reduces or eliminates the amount of water that seeps into the soil, thus negating the need for a buffer around surface contaminated areas.*

Question: Why is the 300 foot buffer limited to cribs, ditches, and trenches?

Response: *The criterion for not discharging within 300 feet of a crib, ditch, or trench is a recommended minimum separation distance that was historically used for siting new cribs at the Hanford Site.*

It is considered a conservative distance based on collective experience at the Hanford Site from borehole drilling near liquid effluent disposal sites. Neither USDOE nor have we observed any lateral spreading beyond 300 feet from liquid disposal sites (Ref: DOE/RL-93-94, Rev. 0, Jan 1994). For the small quantities of water being discharged and the very limited number of times that discharges occur, we think the 300-foot buffer is very conservative and therefore poses no risk to mobilizing soil contamination.

Question: Will a 300 foot buffer prevent wastewater from mixing with contaminated soil?

Response: *Yes. See response above.*

Question: Why should the Department of Energy dump water into the ground in the River Corridor or around the leaking underground storage tanks?

Response: *The USDOE may not discharge water onto the soil within surface contaminated areas or within 300 feet of a crib, ditch, or trench. They do not discharge water around underground storage tanks. The conditions in the permit prevent the mobilization of contaminants in soils anywhere on site, including the River Corridor.*

USDOE Comments on the Draft Fact Sheet

- Appendix D is not mentioned in the Fact Sheet and it is not clear why this has been included. This list is a snap shot in time and the discharges authorized by the permit could occur anywhere on the Hanford Site, at any time, and in any volume up to the permit limits. Please clarify why this table is included so that it is not interpreted that the only discharges allowed on the Hanford Site are those listed in Appendix D.

  Response: *We will change the Fact Sheet to explain Appendix D.*

- Fact Sheet Section 6.0, 10th paragraph and 11th paragraph. Paragraph 10 of Section 6.0 states that the 300 foot restriction specified in Special Permit Condition S4.B is based on Hanford Site information for the distance required between discharges so as to prevent the interaction or intermingling of the discharges with known contaminants. This distance is based on criteria for siting disposal sites with large volume discharges that occur over long periods of time (e.g., crib) and this should be reflected in this section. It is suggested that the 10th paragraph be revised to reflect the information from DOE/RL-93-94, Rev. 0, Page 12. The 300 feet criterion is a recommended minimum separation distance for siting new cribs at the Hanford Site. It is considered a conservative distance based on collective experience at the Hanford Site from borehole drilling in the vicinity of liquid effluent disposal sites. Lateral spreading from adjacent liquid disposal sites greater than 300 feet apart has not been observed to impact either disposal stream.

  Response: *We agree, and will amend this paragraph to be more specific and to include information from DOE/RL-93-94.*

- [Section] G12. The permit and fact sheet does not address underground injection control wells (UICs). It is recommended that the following be added to the exemptions in G12: G12.M: The discharge of fluids into underground injection control wells is regulated by Chapter 173-218 of the Washington State Administrative Code (WAC). ST 4511 does not apply to these discharges unless it is in conjunction with that chapter (e.g., WAC 173-218-110).

  Response: *We discussed this with USDOE's contractor, Mission Support Alliance, and reached agreement that a section on underground injection control wells was not needed.*

- [Section] G12.E Page 18 of 18. The document number for "Vehicle and Equipment Wastewater Discharges" is identified in the draft permit as "WQ-R-95-56" but the document number on the Ecology publication website is "WQ-R-95-056."

  Response: *We agree, and will revise the document number.*

USDOE Comments on the Draft Permit

- **General comment:** The numbering in the permit should be corrected in the following areas:
  - S1.A.2
  - S1.A.3
  - S1.B
  - S7.A (currently reads S1.C)
  - G3 (renumber list beginning with "1")

  Response: *We agree, and will revise the numbering in the permit where needed.*

- Conditions S.1.B.1, S.1.B.2, S.7.A, S.7.B. Recommend that conditions S.1.B.1, S.1.B.2, S.7.A, and S.7.B be replaced. This would consolidate the comments and facilitate permit compliance. The suggested change will continue to protect human health and the environment through implementation of BMPs, and discharges will still be limited to raw or potable water that meets GWQC. Suggest that conditions S.1.B.1, S.1.B.2, S.7.A, and S.7.B be replaced with the following text:

  > "For water used for hydrotest, maintenance, construction, cooling water, and drinking water line flushes, instantaneous flow must be less than 1,000 gallons per minute."

  Response: *We do not agree. These sections have been referenced in other documents (outside of the ST4511 Permit). Removing these sections will result in confusion when trying to look up those sections.*

- Condition S.5.A.2, P2BMP Plan Requirements, page 8. The reference to the "Stormwater Pollution Prevention Planning for Industrial Facilities (WQ-R-93-015)" appears to be obsolete. Suggest replacing with a reference to "Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities (04-10-030)" as well as a reference to the "Stormwater Management Manual for Eastern Washington." The latter has some excellent BMPs for construction stormwater.

  Response: *We agree, and will revise permit as suggested.*

- Condition S1.A.3 (Should be S1B.2). The text currently states: "For industrial stormwater discharges and drinking water line flushing, the Permittee will not use this permit condition." Remove "drinking" so that the text reads "water line flushing," as there are other types of line flushing that are allowed to go above the 150 gallons per minute instantaneous limit (see S7.B.1)

  Response: *We agree and will remove the word "drinking."*

- Condition S2.B.3. Demonstrating compliance was clearer with the language in the current permit. Add back in "This condition will be considered to be met as long as the total volume of all measured significant discharges (as defined in Permit Condition S.6) is below 1,500,000 gallons per day."

  Response: *We agree, and will revise the permit as suggested.*

- Condition S3.A, Source Water Limitations (page 6). Suggest adding raw groundwater to the list of acceptable source waters for hydrotesting, maintenance, and construction discharges (same as S3.B). Research and development activities often use groundwater to conduct tracer testing. Revise section to read,:

  "For the purpose of this Permit, the source waters allowed to be used for… are raw Columbia River water, potable water (treated Columbia River water or groundwater), raw groundwater, or demineralized water."

  Response: *We agree, and will add raw groundwater is acceptable as a source water*.

- Condition S4.A.7. The last sentence of S4.A.7 has been modified to remove the option to discharge treated water under this Permit or other appropriate disposal. Modify the last sentence to allow discharge of treated water under this Permit or other appropriate disposal as indicated in the current permit. It may be as simple as filtering the water to meet the discharge criteria, in which case the permit should allow for the discharge. By deleting "other appropriate disposal," the permit unnecessarily restricts the permittee's options for disposal of the water. For example, if the volume is small, it may be possible to solidify the material and dispose of the solidified material to an onsite landfill.

  Response: *We agree, and will change the language to include "other appropriate disposal options."*

- Condition S5.A.3. The second sentence states: Similarly, when new or replacement chemical additives are added to a process, the Plan will include how the Permittee will ensure that appropriate actions are taken to protect the environment and quality of the groundwater. This should be limited specifically to new or replacement chemicals used for activities authorized under this permit in condition S1.A.

  Response: *We agree, and will revise this statement to make it clear it refers only to discharges this permit authorizes*.

- Condition S5.C. 30 days to provide a draft revision to Ecology is not practical for Hanford contractors. Replace the 30-day requirement with 90 days in the current permit.

  Response: *We agree. While 30 days is the time frame the Water Quality Program uses statewide, it can take longer at Hanford because of coordination among the various Hanford contractors. We will change the language to allow for submittal of the Plan within 90 days.*

- Condition S7.B. The current title of this section does not convey the content. Suggest changing to something like "Discharge Rate Exemptions Specific to Water Line Flushing Activities."

  Response: *We agree and will revise the title as suggested*.

- Condition S7.C.1. Although these conditions are helpful for most situations, it would better if there was additional latitude for unanticipated or unique situations. It is recommended that the last sentence of the paragraph be modified to state:

  "These facility activities are subject to the following controls and limitations, unless prior authorization is received from Ecology."

Response: *We do not agree. We will not authorize discharges that do not meet the location or distance limits specified in this permit. Also, additional discharges may be approved under Section S7.A.*

- Summary of Report Submittals, Table, page 3. The entry in the table for G4 refers to "Permit Application for Substantive Changes to the Discharge" but section G4 is titled, "Compliance with Other Laws and Statutes." Revise reference in the table to permit section S9?

  Response: *We will delete this entry from the table. It was an error.*

COMMENTERS

We received comments from Columbia Riverkeeper and from the Permittee.

We also received a comment that did not relate directly to this permit, and addressed that separately.

APPENDIX A: COPIES OF ALL PUBLIC NOTICES

Public notices for this comment period:

1. Public notice (focus sheet).
2. Classified advertisement in the *Tri-City Herald*.
3. Notice sent to the Hanford-Info email list.
4. Event posted on Ecology Hanford Education & Outreach Facebook page.

PUBLIC COMMENT PERIOD

DEPARTMENT OF ECOLOGY State of Washington

Nuclear Waste Program **December 2012**

Miscellaneous Streams Waste Discharge Permit

The Washington State Department of Ecology invites you to comment on a proposed state waste discharge permit for miscellaneous streams at the Hanford Site in south-central Washington. The draft permit is available for your review.

This permit consolidates four previous permits into one. The formal name of this permit is "Categorical State Waste Discharge Permit ST0004511."

What are "miscellaneous streams?"

Miscellaneous streams include liquids from the following:

- Construction.
- Maintenance.
- Cooling.
- Fire suppression.
- Industrial stormwater.
- Hydrotesting.

What does the permit cover?

The permit exists to control the discharge of wastewater streams on the Hanford Site. Ecology's main concern is to prohibit practices that could increase, move, or spread groundwater contamination.

Permit conditions include discharge limitations, source water limitations, pollution prevention, and best management practice requirements. The permit fact sheet includes more information on how this permit came about and the kinds of wastes it covers.

The permit covers water discharges from across the Hanford Site, in areas related to the Department of Energy's cleanup mission. It does not cover leased areas or those managed by other agencies.

WHY IT MATTERS

Though Hanford has many more complex and dangerous wastes to manage, even the routine waste water from common industrial sources must be managed in a way that protects the environment.

Public Comment Period

December 17, 2012, through February 1, 2013

To submit comments or request a public hearing, contact (in writing):

Stacy Nichols
3100 Port of Benton Blvd
Richland, WA 99354
hanford@ecy.wa.gov

Document Review Locations:

Nuclear Waste Program website
www.ecy.wa.gov/programs/nwp/commentperiods.htm

Public Information Repositories (see page 2 for locations and contact information.)

Tips on Effective Commenting

http://www.ecy.wa.gov/biblio/0307023.html

Special accommodations

If you need this document in a format for the visually impaired, call the Nuclear Waste Program at 509-372-7950.

Persons with hearing loss, call 711 for Washington Relay Service. Persons with speech disability call 877-833-6341.

Publication Number: 12-05-020

Figure 1. Public notice (focus sheet) page 1 of 2.

DEPARTMENT OF ECOLOGY
State of Washington

3100 Port of Benton Blvd
Richland, WA 99354

Public Comment Period
Miscellaneous Streams
Waste Discharge Permit
12/17/12 – 2/1/13

Will there be a public hearing? We don't have one scheduled, but if we get requests (see sidebar on page 1), we may reconsider.

What's next? When the comment period closes, we will consider the comments received and revise the permit if needed. Then we will issue the final permit and a response to comments. The permit's fact sheet describes the appeal process. The permit will be in effect for five years.

Hanford's Public Information Repositories and other review locations

University of Washington
Suzzallo Library, Govt Pubs Dept
Seattle, WA 98195
Hilary Reinert (206) 543-5597
Reinerth@uw.edu

Portland State University
Government Information
Branford Price Millar Library
1875 SW Park Avenue
Portland, OR 97207-1151
Claudia Weston (503) 725-4542
westonc@pdx.edu

Gonzaga University
Foley Center Library
East 502 Boone Ave.
Spokane, WA 99258
John S. Spencer (509) 313-6110
spencer@gonzaga.edu

Washington State University
Consolidated Information Center
Room 101L
Richland, WA 99352
Janice Parthree (509) 375-7443
Janice.parthree@pnnl.gov

Department of Ecology
Nuclear Waste Program
Resource Center
3100 Port of Benton Boulevard
Richland, WA 99354
Valarie Peery (509) 372-7920
Valarie.Peery@ecy.wa.gov

Department of Energy
Administrative Record
2440 Stevens Drive, room 1101
Richland, WA 99354
Heather Childers (509) 376-2530
Heather_M_Childers@rl.gov

Figure 2. Public notice (focus sheet) page 2 of 2.

Classified Legals

Washington's Department of Ecology invites you to comment on a proposed renewal of a state waste discharge permit for miscellaneous streams at the Hanford Site in south-central Washington. The draft permit is available for your review.

The public comment period is from December 17, 2012 through February 1, 2013. Submit your comments in writing to Stacy Nichols. Email: Hanford@ecy.wa.gov. Postal: 3100 Port of Benton Blvd, Richland WA 99354. We prefer email.

This permit consolidates four previous permits into one. The formal name of this permit is Categorical State Waste Discharge Permit ST0004511.

Miscellaneous streams include liquids from the following: construction, maintenance, cooling, fire suppression, industrial stormwater, and hydrotesting.

The permit is to control the discharge of wastewater streams on the Hanford Site. Our main concern is to prohibit practices that could increase, move, or spread groundwater contamination.

Permit conditions include discharge limitations, source water limitations, pollution prevention, and best management practice requirements.

The permit fact sheet includes more information on how this permit came about and the kinds of wastes it covers.

When the comment period closes, we will consider the comments received and revise the permit if needed. Then we will issue the final permit and responsiveness summary. The fact sheet for the permit describes the appeal process. The permit will be in effect for five years.

You can find the draft permit, supporting fact sheet, and the public notice online at www.ecy.wa.gov/programs/nwp/commentperiods.htm and at the following locations:

Department of Ecology
Nuclear Waste Program
Resource Center3100 Port of Benton Boulevard
Richland, WA 99354
Valarie Peery (509) 372-7920
Valarie.Peery@ecy.wa.gov

Department of Energy
Administrative Record
2440 Stevens Drive, room 1101
Richland, WA 99354
Heather Childers (509) 376-2530
Heather_M_Childers@rl.gov

Gonzaga University Foley Center Library
East 502 Boone Ave.
Spokane, WA 99258
John S. Spencer (509) 313-6110
spencer@gonzaga.edu

Washington State University
Consolidated Information Center Room 101L
Richland, WA 99352
Janice Parthree (509) 376-7443
Janice.parthree@pnnl.gov

University of Washington
Suzzallo Library, Govt Pubs Dept
Seattle, WA 98195
Hilary Reinert (206) 543-5597
Reinerth@uw.edu

Portland State University
Government Information
Branford Price Millar Library
1875 SW Park Avenue
Portland, OR 97207-1151
Claudia Weston (503) 725-4542
weston@pdx.edu

12-4926, 12/16/2012

C8 TRI-CITY HERALD SUNDAY, DECEMBER 16, 2012

Financial/

Figure 2. Classified advertisement in the Tri-City Herald.

Brown, Madeleine (ECY)

From: Brown, Madeleine (ECY) <mabr461@ecy.wa.gov>
Sent: Monday, December 17, 2012 9:51 AM
To: hanford-Info@listserv.wa.gov
Subject: Comment period starts today

This is a message from the Washington Department of Ecology

Comment period starts today

Today, Ecology is starting a comment period for the renewal of a permit for miscellaneous waste water streams at Hanford. The comment period runs through February 1, 2013.

This permit consolidates four previous miscellaneous streams permits into one. The formal name of this permit is "Categorical State Waste Discharge Permit ST0004511." Miscellaneous streams are not contaminated. They include liquids from the following:

- Construction.
- Maintenance.
- Cooling.
- Fire suppression.
- Industrial storm water.
- Hydrotesting – raw water used to test lines.

The permit is issued to the U.S. Department of Energy, Richland Operations office. It allows routine activities required for the permittee to carry out its cleanup mission. The permit is a renewal. The permit first took effect in 2005. The permit is in effect for five years.

The public notice and the materials for this permit are available on the Nuclear Waste Program's comment period web page.

Email Hanford@ecy.wa.gov if you have questions, or to submit comments. You may also call the Hanford cleanup line at 800-321-2008 for more information.

1

Figure 3. Notice sent to the Hanford-Info email list.

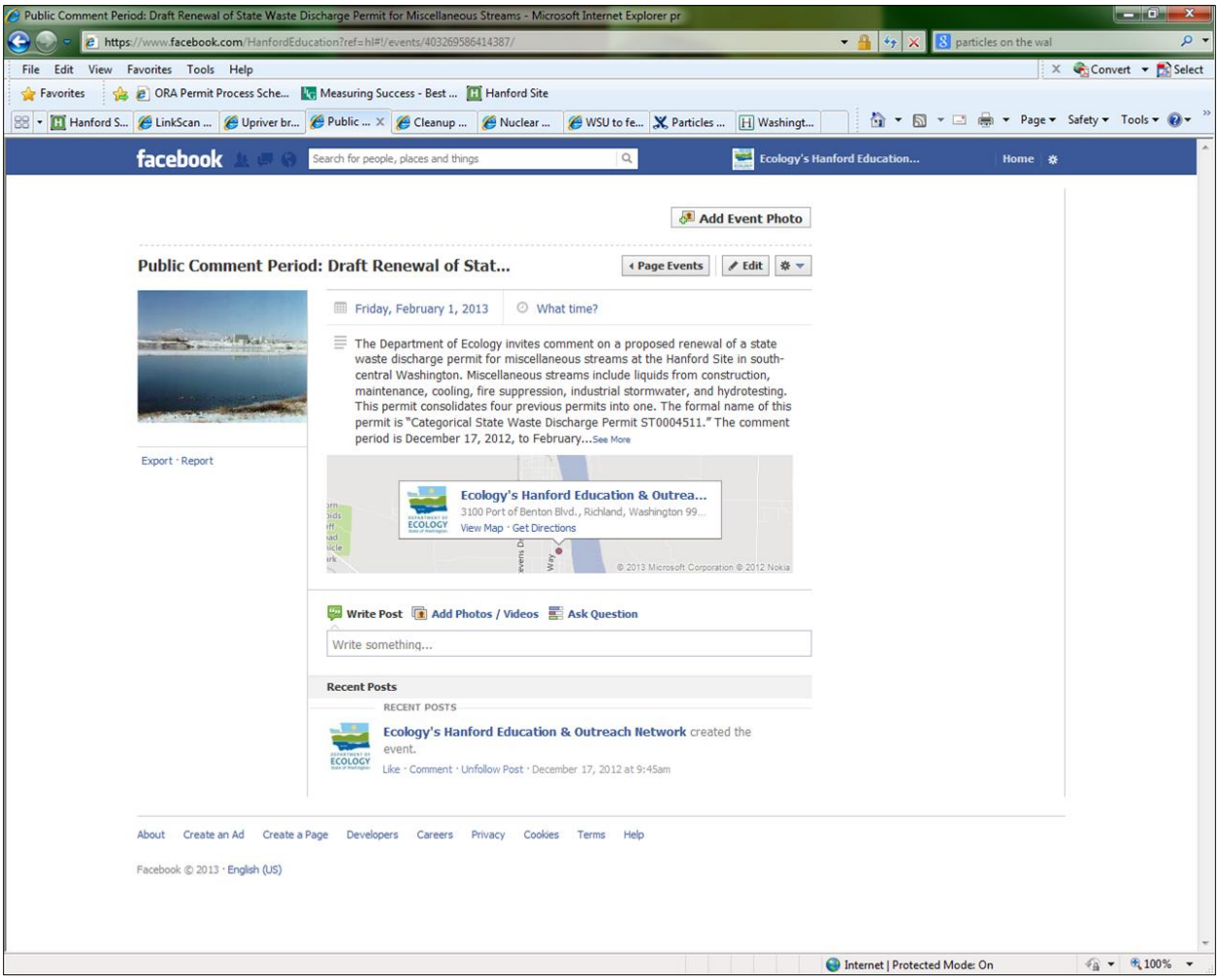

Figure 4. Event posted on Ecology Hanford Education & Outreach Facebook page.

APPENDIX B: COPIES OF ALL WRITTEN COMMENTS

COLUMBIA RIVERKEEPER®
Clean Water • Healthy Rivers • Our Future

Columbia Riverkeeper
111 Third Street
Hood River, OR 97031
www.columbiariverkeeper.org

January 30, 2013

Washington Department of Ecology
c/o Stacy Nichols
3100 Port of Benton Blvd.
Richland, WA 99354

Via Email to: hanford@ecy.wa.gov

RE: Hanford Miscellaneous Streams Waste Discharge Permit – Categorical State Waste Discharge Permit ST0004511.

Washington Department of Ecology:

Columbia Riverkeeper (Riverkeeper) submits these comments regarding the Washington Department of Ecology's (Ecology) proposal to renew Categorical State Waste Discharge Permit ST0004511, hereinafter referred to as the "Miscellaneous Streams Permit" or "the permit." Riverkeeper's mission is to protect and restore the Columbia River and all life associated with it, from its headwaters to the Pacific Ocean. Riverkeeper represents over 7,000 members and supporters in Oregon and Washington and regularly comments on decisions impacting Hanford and the Columbia River. Riverkeeper's staff and members kayak and swim in the Hanford Reach of the Columbia each summer, where contaminated groundwater from Hanford reaches the river. We request that Ecology refine its approach to permitting industrial wastewater discharges at Hanford, or thoroughly explain why the existing permit adequately protects Hanford's groundwater, the Columbia River, and the people who use the river.

Proposed Pollution Discharge Permit

The existing Miscellaneous Streams Permit allows the U.S. Department of Energy and its contractors (Department of Energy) to dump industrial wastewater into the ground almost anywhere at Hanford. Before renewing the permit for the next five years, Ecology should take this opportunity to make the permit more protective of Hanford's groundwater. The industrial wastewater covered by the permit comes from a variety of sources including:

- Stormwater
- Condensation
- Cooling water
- Hydrostatic testing water
- Waterline flushing
- Equipment wash-down
- Pressure washing

The existing permit allows the Department of Energy to dump 2.1 million gallons of such industrial wastewater per day into the ground, plus an unlimited amount of stormwater. Before allowing this to continue for another five years, Ecology should examine whether the terms of the existing permit protect Hanford's groundwater and take this opportunity to make any necessary changes.

Polluted Groundwater at Hanford

Radioactive and toxic contaminants are spreading through Hanford's soil and groundwater, and reaching the Columbia River. Historically, the Department of Energy dumped hundreds of millions of gallons of radioactive waste into injection wells, trenches, buried drums, and large underground tanks. As these various devices began to leak, the downward flow of water through the soil carried radioactive and toxic contaminants like Strontium-90, Chromium, Tritium, Carbon Tetrachloride, Uranium, and Iodine-129 into the groundwater and the Columbia. Now, Hanford is widely recognized as the most contaminated site in the Western Hemisphere, and the Department of Energy estimates that about 70 square miles of groundwater under Hanford contains radioactive and chemical contaminants at or above federal drinking water standards. Pouring more water into Hanford's contaminated soil could accelerate the movement of contaminants from the soil into the groundwater, and from the groundwater into the Columbia.

Specific Comments

Ecology acknowledges that water percolating through the soil can spread contaminants into the groundwater. Ecology, *Cleaning Hanford's Groundwater*, 3 (online at: https://fortress.wa.gov/ecy/publications/publications/0805001.pdf). Yet Ecology fails to explain

why the permit's limits on *how much* water the Department of Energy can discharge, and *where* those discharges can occur, protect Hanford's groundwater and the Colombia.

I. Impact of Discharging Over 2.1 Million Gallons of Water Per Day

The existing permit allows the Department of Energy to discharge a total of 2.1 million gallons of industrial wastewater per day, plus an unlimited amount of industrial stormwater. *Permit at* S2.B.3 & 4. However, Ecology's permit and fact sheet never explain how Ecology came up with this limit, or how discharging this much water on a daily basis would affect the movement of, and contamination levels in, Hanford's groundwater.

> **Question:** What is the 2.1 million gallon per day limit based on, and what are the environmental consequences of discharging that much water on a daily basis for the five-year life of the permit?

Besides the total amount of discharge allowed, the permit authorizes each individual discharge event to dump water at a rate of 10 gallons per minute averaged annually and 150 gallons per minute at any given time. *Permit at* S1.A.2 & 3. The 10 gallon per minute limit apparently comes from a statewide regulation governing wastewater discharges, which states that discharges of domestic wastewater smaller than 10 gallons per minute are too minor to be regulated under Washington's Waste Discharge Permit program. *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams*, DOE/RL-93-94 at 11 (1994); Wash. Admin. Code 173-216-050(1)(g). It is not clear why this limit—developed for domestic wastewater all over Washington—is appropriate for industrial wastewater at Hanford. In fact, the Department of Energy acknowledged that the 10 gallon per minute threshold "may be too high" for Hanford. DOE/RL-93-94 at 11.

> **Question:** What evidence does Ecology have that the 10 gallon per minute rate adequately protects groundwater from the uniquely dangerous contaminants found at Hanford?

II. Ecology Should Require the Department of Energy to Test for Soil Contamination Before Discharging Large Volumes of Water.

The existing Permit does not require the Department of Energy to test for soil contamination before dumping water. In some cases, where the discharge is very small or the soil at a specific location has been adequately studied, this may be acceptable. However, toxic and radioactive contamination is moving through the soil and groundwater continuously—often in ways we can't anticipate—and many areas of contamination may simply remain undiscovered.

> **Question:** For large discharges like hydrostatic testing discharges, waterline flushing, and "significant discharges" as defined in section S6.A of the Permit, why isn't Ecology requiring the Department of Energy to test for soil contamination before dumping thousands of gallons of water?

By comparison, to get a permit to discharge less than 10 gallons per minute of domestic wastewater into the ground in Washington, a prospective permittee must conduct a full soil characterization analysis on the area of the proposed discharge. *See* Wash. Admin. Code 246-272B. The requirements at Hanford should be at least as strict.

III. Ecology Should Restrict *Where* the Department of Energy Discharges Wastewater.

The existing Permit allows the Department of Energy to discharge industrial wastewater almost anywhere at Hanford. In fact, the Permit only prohibits Department of Energy from dumping water 1) "within a surface contaminated area (areas with dangerous or hazardous waste and radioactive contaminants)" and 2) within 300 feet of a "crib, ditch, or trench used for disposal of dangerous and hazardous waste and radioactive contaminants." *Permit at* S4.A.1 & 2. These 'limits' raise several questions.

> **Question:** What is a "surface contaminated area"? For example, is a single-walled tank a "surface contaminated area"? Alternatively, is a "surface contaminated area" the entire central plateau?

If "surface contaminated area" has a specific meaning, the permit should explain it. If there is no better definition than "areas with dangerous or hazardous waste and radioactive

contaminants," this permit condition is too vague and should be revised to provide more certainty for the public and the Department of Energy.

Question: Why is there no 300 foot buffer around 'surface contaminated areas'?

As the permit is written, the Department of Energy could dump thousands of gallons of water into the ground directly outside a contaminated area. Without a buffer around surface contaminated areas, wastewater disposal could mobilize contaminants in the soil, propelling them towards the groundwater.

Question: Why is the 300 foot buffer limited to cribs, ditches, and trenches?

For example, why not expand the protection to all areas where contamination exists, such around as leaking tanks, inactive reactors like the Fast Flux Test Facility, contaminated debris or equipment, and contaminated groundwater plumes?

Question: Will a 300 foot buffer prevent wastewater from mixing with contaminated soil?

The 300 foot buffer is apparently based on observations that water discharged to the ground will not spread more than 300 feet laterally. *See* DOE/RL-93-94 at 12. Even if this is true in all circumstances, it does not account for the fact that contamination from a leaking tank or crib can spread laterally in the soil for much farther than 300 feet. If a crib or tank leaked, and that leak traveled laterally underground for several hundred feet, permit condition S4.A.2 would essentially allow the Department of Energy to dump water directly above contaminated soil. Ecology should either increase the 300 foot buffer significantly, or require soil tests prior to large discharges, or both.

Question: Why should the Department of Energy dump water into the ground in the River Corridor or around the leaking underground storage tanks?

Ecology should not allow the Department of Energy to discharge any water into the ground in areas of Hanford where soil contamination is extreme or where the groundwater is known to be contaminated. For instance, the 200 Area around the leaking underground storage tanks contains severely contaminated soils and overlies contaminated groundwater plumes. Nevertheless, the exiting permit would apparently allow the Department of Energy to dump large amounts of water—used to hydrostatically test the Waste Treatment Plant—into the ground here. Similarly, the existing permit would allow the Department of Energy to dump water in the River Corridor, even though groundwater is close to the surface there and most of the River Corridor overlies contaminated groundwater plumes.

Conclusion

Riverkeeper is deeply concerned about the impact of contaminated groundwater on the Columbia River. The proposed permit and supporting permit factsheet fail to address how the permit conditions protect people, salmon, and other aquatic life from groundwater pollution. We look forward to Ecology's responses and hope that the renewed Miscellaneous Streams Permit will help prevent the spread of contamination through Hanford's soil and groundwater.

Sincerely,

Miles Johnson
Clean Water Attorney
Columbia Riverkeeper

From: Clement, Curt J [Curt_J_Clement@rl.gov]
Sent: Monday, February 04, 2013 9:52 AM
To: Bond, Rick (ECY); Nichols, Stacy (ECY)
Subject: FW: Comments on Draft State Waste Discharge Permit ST0004511 (Miscellaneous Streams)

FYI

From: Clement, Curt J
Sent: Thursday, January 31, 2013 5:44 PM
To: Hanford@ecy.wa.gov
Cc: Jackson, Dale (dale.jackson@rl.doe.gov); Beam, Thomas G; Shattuck, Ann F; Aldridge, Theresa L (PNSO); Raney, Elizabeth A (Elizabeth.Raney@pnnl.gov); Woolard, Joan G (jgwoolar@wch-rcc.com); Simmons, Fen M; Groce, Heather (hmgroce@bechtel.com)
Subject: Comments on Draft State Waste Discharge Permit ST0004511 (Miscellaneous Streams)

Ms. Nichols:

On behalf of DOE and it's Hanford contractors, please find attached a consolidated set of comments for ST0004511 and its fact sheet.

Feel free to contact me with any questions.

Curt Clement
376-6223

HANFORD COMMENTS—DRAFT STATE WASTE DISCHARGE PERMIT ST0004511 AND FACT SHEET

Comment Number	Draft Section/Reference *(be as specific as possible)*	Comment	Recommended Action/ Requested Change
1	Fact Sheet Appendix D	Appendix D is not mentioned in the Fact Sheet and it is not clear why this has been included. This list is a snap shot in time and the discharges authorized by the permit could occur anywhere on the Hanford Site, at any time, and in any volume up to the permit limits.	Please clarify why this table is included so that it is not interpreted that the only discharges allowed on the Hanford Site are those listed in Appendix D. For example, the following text could be used to explain Appendix D: "Appendix D includes a listing of the miscellaneous discharges at the Hanford Site as of the date of the preparation of the permit application. The number, volume, and location of discharges are anticipated to changes as activities and needs change. Any of the discharges authorized by ST4511 may be conducted anywhere on the Hanford Site pursuant to the terms and conditions identified in Permit ST4511."
2	Fact Sheet Section 6.0, 10th paragraph and 11th paragraph.	Paragraph 10 of Section 6.0 states that the 300 foot restriction specified in Special Permit Condition S4.B is based on Hanford Site information for the distance required between discharges so as to prevent the interaction or intermingling of the discharges with known contaminants. This distance is based on criteria for siting disposal sites with large volume discharges that occur over long periods of time (e.g., crib) and this should be reflected in this section.	It is suggested that the 10th paragraph be revised to reflect the information from DOE/RL-93-94, Rev. 0, Page 12. The 300 feet criterion is a recommended minimum separation distance for siting new cribs at the Hanford Site. It is considered a conservative distance based on collective experience at the Hanford Site from borehole drilling in the vicinity of liquid effluent disposal sites. Lateral spreading from adjacent liquid disposal sites greater than 300 feet apart has not been observed to impact either disposal stream.

HANFORD COMMENTS—DRAFT STATE WASTE DISCHARGE PERMIT ST0004511 AND FACT SHEET

3	G12	The permit and fact sheet does not address underground injection control wells (UICs).	It is recommended that the following be added to the exemptions in G12: G12.M: The discharge of fluids into underground injection control wells is regulated by Chapter 173-218 of the Washington State Administrative Code (WAC). ST 4511 does not apply to these discharges unless it is in conjunction with that chapter (e.g., WAC 173-218-110).
4	G12.E Page 18 of 18	The document number for "Vehicle and Equipment Wastewater Discharges" is identified in the draft permit as "WQ-R-95-56" but the document number on the Ecology publication website is "WQ-R-95-056". https://fortress.wa.gov/ecy/publications/publications/95056.pdf	Confirm that the correct document number for "Vehicle and Equipment Wastewater Discharges" is referenced in the ST4511 draft permit.
5	Multiple	The numbering in the permit should be corrected in the following areas: • S1.A.2 • S1.A.3 • S1.B • S7.A (currently reads S1.C) • G3 (renumber list beginning with "1")	Revise permit numbering where necessary.
6	S.1.B.1, S.1.B.2, S.7.A, S.7.B	Recommend that conditions S.1.B.1, S.1.B.2, S.7.A, and S.7.B be replaced. This would consolidate the comments and facilitate permit compliance. The suggested change will continue to protect human health and the environment through implementation of BMPs, and discharges will still be limited to raw or potable water that meets GWQC.	Suggest that conditions S.1.B.1, S.1.B.2, S.7.A, and S.7.B be replaced with the following text: "For water used for hydrotest, maintenance, construction, cooling water, and drinking water line flushes, instantaneous flow must be less than 1,000 gallons per minute."

HANFORD COMMENTS—DRAFT STATE WASTE DISCHARGE PERMIT ST0004511 AND FACT SHEET

7	S.5.A.2, P2BMP Plan Requirements, page 8	The reference to the "Stormwater Pollution Prevention Planning for Industrial Facilities (WQ-R-93-015)" appears to be obsolete.	Suggest replacing with a reference to "Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities (04-10-030)" as well as a reference to the "Stormwater Management Manual for Eastern Washington". The latter has some excellent BMPs for construction stormwater.
8	S1.A.3 (Should be S1B.2)	The text currently states: "For industrial stormwater discharges and drinking water line flushing, the Permittee will not use this permit condition."	Remove "drinking" so that the text reads "water line flushing" as there are other types of line flushing that are allowed to go above the 150 gallons per minute instantaneous limit (see S7.B.1)
9	S2.B.3	Demonstrating compliance was clearer with the language in the current permit.	Add back in "This condition will be considered to be met as long as the total volume of all measured significant discharges (as defined in Permit Condition S.6) is below 1,500,000 gallons per day."
10	S3.A, Source Water Limitations (page 6)	Suggest adding raw groundwater to the list of acceptable source waters for hydrotesting, maintenance, and construction discharges (same as S3.B). Research and development activities often use groundwater to conduct tracer testing.	Revise section to read, "For the purpose of this Permit, the source waters allowed to be used for… are raw Columbia River water, potable water (treated Columbia River water or groundwater), raw groundwater, or demineralized water."
11	S4.A.7	The last sentence of S4.A.7 has been modified to remove the option to discharge treated water under this Permit or other appropriate disposal.	Modify the last sentence to allow discharge of treated water under this Permit or other appropriate disposal as indicated in the current permit. It may be as simple as filtering the water to meet the discharge criteria; in which case the permit should allow for the discharge. By deleting "other appropriate disposal", the permit unnecessarily restricts the permittee's options for disposal of the water. For example, if the volume is small, it may be possible to solidify the material and dispose of the solidified material to an onsite landfill.

HANFORD COMMENTS—DRAFT STATE WASTE DISCHARGE PERMIT ST0004511 AND FACT SHEET

12	S5.A.3	The second sentence states: Similarly, when new or replacement chemical additives are added to a process, the Plan will include how the Permittee will ensure that appropriate actions are taken to protect the environment and quality of the groundwater. This is a very broad statement that encompasses many different activities not necessarily associated with waste water discharges.	This should be limited specifically to new or replacement chemicals used for activities authorized under this permit in condition S1.A.
13	S5.C	30 days to provide a draft revision to Ecology is not practical for Hanford contractors.	Replace the 30 day requirement with 90 days in the current permit.
14	S7.B	The current title of this section does not convey the content.	Suggest changing to something like "Discharge Rate Exemptions Specific to Water Line Flushing Activities."
15	S7.C.1	Although these conditions are helpful for most situations, it would better if there was additional latitude for unanticipated or unique situations.	It is recommended that the last sentence of the paragraph be modified to state: These facility activities are subject to the following controls and limitations, unless prior authorization is received from Ecology.
16	Summary of Report Submittals, Table, page 3	The entry in the table for G4 refers to "Permit Application for Substantive Changes to the Discharge" but section G4 is titled, "Compliance with Other Laws and Statutes".	Revise reference in the table to permit section S9?