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Department of Energy
Richland, Washington

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Miscellaneous Streams Best Management Practices (BMP) Report

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Miscellaneous Streams Best Management Practices (BMP) Report

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Approved for Public Release

CONTENTS

GLOSSARY	v
METRIC CONVERSION CHART	vi
1.0 INTRODUCTION	1-1
1.1 Purpose	1-1
2.0 APPROACH	2-1
2.1 Summary of Miscellaneous Streams Inventory	2-1
2.2 Regulatory Requirements	2-1
2.3 Definition of Best Management Practices	2-2
3.0 BEST MANAGEMENT PRACTICE STREAMS	3-1
3.1 Miscellaneous Streams Requiring BMP Evaluation	3-1
3.2 Best Management Practice Alternatives	3-9
3.2.1 Streams Discharging to Surface Contaminated Areas (Category "b" Streams)	3-9
3.2.2 Potentially Contaminated Streams (Category "c" Streams)	3-10
3.2.3 Streams within 91 meters (300 feet) of a Crib, Ditch or Trench (Category "d" Streams)	3-11
3.3 Preferred Alternatives Summary	3-14
4.0 IMPLEMENTATION SCHEDULE	4-1
5.0 REFERENCES	5-1
APPENDIX A	A-i

TABLES

Table 3-1. Best Management Practice Streams	3-2
Table 3-2. BMP Alternatives for Category "b" Streams.	3-10
Table 3-3. BMP Alternatives for Category "c" Streams.	3-11
Table 3-4. Summary Table for Category "d" Stream	3-12
Table 3-5. BMP Alternatives for Category "d" Streams.	3-14
Table 3-6. Preferred Alternative Summaries.	3-15
Table 4-1. Implementation Schedule Summary.	4-2
Table A-1. Streams Removed from Original BMP List.	A-2
Table A-2. Streams Added to Original BMP List.	A-9

FIGURES

Figure 3-1. Location Map for the 200 West Area.	3-18
Figure 3-2. Facilities and Stream Discharge Sites Near 231-Z Building.	3-19
Figure 3-3. Facilities and Stream Discharge Sites Near the Plutonium Finishing Plant (Z Plant).	3-20
Figure 3-4. Facilities and Stream Discharge Sites Near 200 West Maintenance Area.	3-21
Figure 3-5. Facilities and Stream Discharge Sites East of 241-S and SX Tank Farms.	3-22
Figure 3-6. Facilities and Stream Discharge Sites Near 222-S Facility.	3-23
Figure 3-7. Location Map for the 200 East Area.	3-24
Figure 3-8. Facilities and Stream Discharges Sites Near B Plant.	3-25
Figure 3-9. Facilities and Stream Discharge Sites Near PUREX.	3-26
Figure 3-10. Facilities and Stream Discharge Sites Near 244-AR.	3-27
Figure 3-11. Facilities and Stream Discharge Sites in Southern 300 Area.	3-28
Figure 3-12. Facilities and Stream Discharge Sites in Central 300 Area.	3-29

GLOSSARY

AKART	All known available, and reasonable treatment (technologies)
BMP	Best Management Practice
DOE-RL	U.S. Department of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
ESPC	Energy Savings Performance Contract
ft	feet
gpm	gallons per minute
NPDES	National Pollutant Discharge Elimination System
PFP	Plutonium Finishing Plant (Z Plant)
PUREX	Plutonium Uranium Extraction (Facility)
RCW	Revised Code of Washington
REDOX	reduction and oxidation
RR	Railroad
TEDF	Treated Effluent Disposal Facility
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company

METRIC CONVERSION CHART**INTO METRIC UNITS****OUT OF METRIC UNITS**

If you know	Multiply by	To get	If you know	Multiply by	To get
Length			Length		
inches	2.54	centimeters	centimeters	0.393	inches
feet	0.3048	meters	meters	3.2808	feet
yards	0.914	meters	meters	1.09	yards
miles	1.609	kilometers	kilometers	0.62	miles
Area			Area		
square feet	0.092	square meters	square meters	10.7639	square feet
square yards	0.836	square meters	square meters	1.20	square yards
square miles	2.59	square kilometers	square kilometers	0.39	square miles
acres	0.404	hectares	hectares	2.471	acres
Mass (weight)			Mass (weight)		
ounces	28.35	grams	grams	0.0352	ounces
pounds	0.453	kilograms	kilograms	2.2046	pounds
short ton	0.907	metric ton	metric ton	1.10	short ton
Volume			Volume		
fluid ounces	29.57	milliliters	milliliters	0.03	fluid ounces
quarts	0.95	liters	liters	1.057	quarts
gallons	3.79	liters	liters	0.26	gallons
cubic feet	0.03	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.76	cubic meters	cubic meters	1.308	cubic yards
Temperature			Temperature		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit

Source: Lindeburg 1990.

1.0 INTRODUCTION

On December 23, 1991, the U.S. Department of Energy, Richland Operations Office (DOE-RL) and the Washington State Department of Ecology (Ecology) agreed to adhere to the provisions of Department of Ecology Consent Order No. DE 91NM-177 (Consent Order) (Ecology and U.S. DOE 1991). The Consent Order lists regulatory milestones for liquid effluent streams at the Hanford Site to comply with the permitting requirements of Washington Administrative Code (WAC) 173-216 (State Waste Discharge Permit Program) or WAC 173-218 (Washington Underground Injection Control Program) where applicable.

Hanford Site liquid effluent streams discharging to the soil column are categorized as follows: Phase I Streams, Phase II Streams, and Miscellaneous Streams. Plans for dispositioning Phase I and Phase II Streams are addressed in two RL reports: *Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site* (DOE-RL 1987), and *Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site* (WHC 1988). There were originally 33 Phase I and Phase II Streams, however, some of these streams have been eliminated. Miscellaneous Streams are those liquid effluent streams discharged to the ground that are not categorized as Phase I or Phase II Streams, and are subject to the requirements of several milestones identified in the Consent Order.

One of the Consent Order milestones was to develop a *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams* (DOE-RL 1994). The document was developed and accepted by Ecology in February 1995. The plan and schedule provides three criteria for identifying streams that are potentially affecting groundwater:

- streams discharging to surface contaminated areas (referred to as category "b" streams);
- potentially contaminated streams (referred to as category "c" streams); and
- streams discharging within 91 meters (300 feet) of a contaminated crib, ditch, or trench (referred to as category "d" streams).

Miscellaneous Streams that meet any of these criteria must be evaluated for application of best management practices (BMP). The requirement to evaluate Miscellaneous Streams that meet any of these criteria for application of BMPs is the subject of this report.

1.1 Purpose

The purpose of this report is to provide the required best management practice preferred alternative as described on Table 6-1 of the plan and schedule. Table 6-1 in the *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams* identifies several activities to be completed for streams with the potential to affect groundwater. This report satisfies Activity 6-1.2, "Submit the BMP options, the preferred selection and implementation schedule to Ecology for approval" (DOE-RL 1994).

1 A list of streams requiring evaluation was submitted in May 1995 as required by Activity 6-1.1 in
2 the plan and schedule. This list of BMP streams has been revised since the original submittal.
3 Several streams from the original list of BMP streams have already been eliminated. These streams
4 were eliminated through facility upgrades, reduction of steam usage, and facility shutdowns. A
5 current list of BMP streams is provided in Table 3-1. A description of the changes to the list of BMP
6 streams is provided in Appendix A.
7

8 Section 2.0 contains applicable definitions and describes regulatory requirements for the BMP
9 streams. The list of BMP streams and possible BMP alternatives for groups of streams are discussed
10 in Section 3.0. A schedule for implementing the BMP preferred alternatives is discussed in Section
11 4.0.

2.0 APPROACH

This section describes the Miscellaneous Streams Inventory and presents the definition and regulatory basis for best management practice evaluation.

2.1 Summary of Miscellaneous Streams Inventory

The *Inventory of Miscellaneous Streams* (DOE-RL 1995) was submitted to Ecology in September 1995. The inventory is maintained in a database that contains basic information for each stream including process description and coordinates. Information in the database comes from facility personnel and site walkdowns. There have been several modifications to this inventory due to facility upgrades, walkdowns of the streams, and detailed mapping activities. This report reflects information obtained from the June 19, 1996, Miscellaneous Streams Inventory database.

Currently there are 521 active Miscellaneous Streams listed in the database. Of the 521 streams listed in the database, 63 (or 12%) are currently listed as meeting at least one of the three BMP criteria. The BMP streams mainly include storm water and steam condensate type discharges. Table 3-1 lists all of the BMP streams.

2.2 Regulatory Requirements

The three criteria that define the BMP streams were selected to identify streams that have the potential to affect groundwater. Regulations used to define pollution of waters of the state include the Water Pollution Control Act and the Washington State Groundwater Quality Standards.

The Water Pollution Control Act (Chapter 90.48 Revised Code of Washington [RCW]) states in section 90.48.080 that it is "unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or cause, permit, or suffer to be thrown, run, drained, allowed to seep or otherwise discharge into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department." "Department" refers to the Department of Ecology. "Waters of the state" include all surface and groundwaters within the state of Washington (RCW 90.48.020).

"Pollution" is defined to mean "such contamination, or other alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish, or other aquatic life" (RCW 90.48.080).

These definitions broadly define pollution to be the addition of any contaminants to waters of the state. The statute prohibits persons from polluting any state waters.

Chapter 90.48 RCW also provides Ecology with the authority to promulgate rules "relating to standards of quality for waters of the state" (RCW 90.48.035). Ecology has promulgated Water Quality Standards for Ground Water of the State of Washington (Chapter 173-200 of the Washington Administrative Code). The Ground Water Quality Standards apply to any activity which has a potential to contaminate groundwater quality. These standards state that the criteria (numeric values) define the maximum contaminant concentrations that protect the beneficial uses of Washington's groundwater (WAC 173-200-040). Concentrations of contaminants that exceed the criteria are, therefore, defined as pollutants.

Discharges which have a potential to contaminate groundwater must be managed to prevent pollution. Depending on the flow rate and specific location, Miscellaneous Streams that discharge waste water to surface contaminated areas (category "b" streams), may have the potential to cause the contaminants that are within the soil matrix to be carried to the groundwater.

Discharges that contain contaminants (category "c" streams) and which have a potential to contaminate groundwater must also be managed to prevent pollution. These streams either exceed or have the potential to exceed the WAC 173-200 Ground Water Quality Standards based on process knowledge. These streams are considered waste water. "Industrial waste water is defined as water or liquid-carried waste from industrial or commercial processes, as distinct from domestic waste water. 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" (WAC 173-216).

Miscellaneous Stream discharges that contain contaminants may be eliminated by either re-routing, collecting, or treating prior to discharge. Source controls may be applied to contaminated streams as "methods of prevention and control." However, if these are applied and the discharge exceeds the groundwater quality criteria, further treatment or demonstration that contaminants will not reach the groundwater may be required.

2.3 Definition of Best Management Practices

BMPs as defined in WAC 173-200 are "schedules of activities, prohibition of practices, maintenance of procedures, and other management practices to prevent or reduce the pollution of groundwater of the state. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage." The National Pollutant Discharge Elimination System (NPDES) guidance (EPA 1979) defines baseline BMPs as "those management practices generally considered to be good practices that are low in cost and are applicable to broad categories of industry and types of substances."

Due to the broad use of the term "best management practice," clarification is required. The process of writing this report and evaluating potentially contaminated streams is a best management

1 practice. Streams requiring this evaluation are called BMP streams. Specific types of BMPs as
2 defined in WAC 173-200 and the NPDES guidance are referred to as "source controls" in this report.

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3.0 BEST MANAGEMENT PRACTICE STREAMS

This section provides a description of the evaluation criteria for defining streams that have the potential to affect groundwater (BMP streams), alternatives for BMP streams, and the preferred alternative for the BMP streams.

3.1 Miscellaneous Streams Requiring BMP Evaluation

Three criteria were specified in the plan and schedule to indicate whether a stream is potentially affecting groundwater. Any stream from the Miscellaneous Streams Inventory meeting one or more of these criteria is required to be evaluated in this report.

If any of the following criteria are true, the Miscellaneous Stream may have the potential to affect groundwater.

1. The discharge is within a surface contaminated area. Surface-contaminated areas are defined as those near-surface soils contaminated with dangerous and/or radioactive wastes. These streams enhance the potential for migration of existing contaminants present in the soil to the groundwater. Miscellaneous Streams that discharge directly to a surface contaminated area may cause pollution of the groundwater. These streams are referred to as category "b" streams.
2. The discharge contains potential contaminants. These discharges may result from processes or from inadvertent wastes entering the discharge. The acceptable effluent quality is based on evaluating the potential for constituents listed in the Ground Water Quality Standards (Table 1 of WAC 173-200) to enter the waste stream at concentrations that would exceed the groundwater criteria. These are referred to as category "c" streams. Miscellaneous Streams originating from sources with physical and/or administrative barriers to prevent contaminants from entering the stream are not considered to have a potential for contaminants.
3. The discharge is within a 91 meters (300 ft) horizontal radius of a known active or inactive crib, ditch, or trench. Crips, ditches and trenches were used for the disposal of effluents that may have contained dangerous and/or radioactive contaminants. Discharges within this radius enhance the potential for migration of existing contaminants present in the soil to reach groundwater. These streams are referred to as category "d" streams. The 91 meters (300 feet) criterion has been used as a minimum separation distance for siting new cribs at the Hanford Site. This distance was selected based on collective experience at the Hanford Site from borehole drilling in the vicinity of liquid effluent disposal sites. Miscellaneous Streams greater than 91 meters (300 feet) from liquid disposal sites were not considered for this assessment.

Streams meeting these criteria are referred to as BMP streams and are listed in Table 3-1. Figures 3-1 through 3-12 depict the locations of each BMP stream.

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
465	bd	Storm Water	202A Building - PUREX steam condensate. LOCATION: south side of building, connected to steam pit #1.	200E	< 0.1
63	bd	Potable Water	202A PUREX, south side of 202A, SW of 295A ASD - Line #8801. Steam condensate discharges to a french drain located within a surface contaminated area.	200E	0.04
65	bd	Potable Water	202A PUREX; north side, along the east side of the north wall next to the 218-E-18 storage tunnel - Line #8801. Steam condensate.	200E	0.04
66	bd	Potable Water	202A PUREX; north side, near the entrance to the storage tunnels - Line #8801. Steam condensate discharges to a french drain located within a surface contaminated area.	200E	0.04
64	bd	Potable Water	202A PUREX; south side of 202A, on the east side of the 218-E-15 storage tunnel - Line #8801. Steam condensate discharges to a french drain located within a surface contaminated area.	200E	0.04
60	d	Potable Water	202A PUREX; south side prior to the #04 gate access - Steam condensate line #8801.	200E	0.04
61	b	Potable Water	202A PUREX; south side, between 202A south wall and the 291AH ammonia off-gas filter building - Line #8801. Steam condensate discharges to a french drain located within a surface contaminated area.	200E	0.04
59	bd	Storm Water Potable Water	202A PUREX; south side, between 291A exhaust fans and 292AB main stack building. Drain collects steam condensate from the 291A control house.	200E	0.04

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
62	bd	Potable Water	202A PUREX; south side, between 292AB main stack building and 218-E-14 storage tunnel - Line #8801. Steam condensate discharges to a french drain located within a surface contaminated area.	200E	0.04
223	c	Potable Water	2715EC Building - Paint Shop sink used to wash latex paint brushes. LOCATION: northeast corner of 2715EC, ten feet west and 25 feet north.	200E	< 1
322	c	Surface Water	291B Building - Plant Canyon Exhaust Sand Filter Drain - Drains liquid effluent in filter bank if waterproofing seal fails. Potential radionuclide contamination.	200E	0
8	d	Potable Water	292B Building - B Plant yard steam line, three inch line to 292-B, steam trap condensate.	200E	0.01
5	d	Potable Water	B Plant Yard Steam Line - Eight inch main, steam trap condensate.	200E	0.7
6	d	Potable Water	B Plant Yard Steam Line - Eight inch main, steam trap condensate.	200E	0.3
4	d	Potable Water	B Plant Yard Steam Line - Ten inch main, steam trap condensate.	200E	0.5
117	d	Potable Water	Steam Trap 2P - Yard-MSS-TRP-042, north of 275EA	200E	0
572	d	Potable Water	Steam Trap 2P - Yard-MSS-TRP-043. LOCATION: north of 275EA.	200E	< 1
573	d	Potable Water	Steam Trap 2P - Yard-MSS-TRP-044. LOCATION: west of 244AR.	200E	0
651	d	Potable Water	Steam Trap 2P-Yard-MSS-TRP-052, TRP-053 - Steam condensate. Both traps discharge into one injection well. LOCATION: northwest of 204-AR, 241AW.	200E	0

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
657	d	Potable Water	204-AR Steam Trap and compressor condensate.	200E	0
689	d	Potable Water	244-AR vessel vent stack steam supply - steam blowdown line in a caisson.	200E	0
660	c	Potable Water	West side of K-3 Filter. Injection well, located below emergency steam jet, receives steam condensate. Potential radionuclide contamination.	200E	0.1
575	d	Potable Water	219S Building - Steam condensate. LOCATION: west of main door of building.	200W	<1
203	d	Storm Water	222S Building - Catch Basin (storm drain) in driveway. This catch basin overflows to the gravel filled drainage pit in stream #586. LOCATION: in the roadway/driveway at the northeast corner of 222S building.	200W	<0.1
586	d	Storm Water	222S Building - Gravel filled drainage pit (7' deep, 20' dia.) collects overflow storm water from catch basin #13 (stream # 215) and the catch basin from stream #203. LOCATION: below grade south of 207-SL, and east of 222S (across the road)	200W	<0.2
510	bd	Potable Water	231Z Building - Injection well received compressor condensate. LOCATION: approximately 10' east of the southwest corner of the west wing.	200W	0
511	bd	Potable Water	231Z building. Compressor condensate. Potentially contaminated with hydrocarbons. LOCATION: approximately 12' east of the southwest corner of west wing.	200W	0

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
569	d	Storm Water	231Z Building - Storm water. LOCATION: approximately 10' east of front door of building.	200W	<0.01
568	d	Storm Water	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	<0.01
567	d	Storm Water	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	<0.01
565	d	Storm Water	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	<0.01
566	d	Storm Water	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	<0.01
254	d	Potable Water	2345Z Building - PFP Complex main steam line trap #01.	200W	0.05
234	d	Potable Water	241Z Building - Main steam line trap.	200W	0.05
233	cd	Potable Water	241Z Building - Tank D-9 steam jacket condensate. Potential for sodium hydroxide contamination. System is in operation only during Plutonium Reclamation Facility operation.	200W	0.05
235	d	Potable Water	241Z Building - Waste tanks steam supply trap. Five steam traps discharge to the same injection well.	200W	0.25
390	d	Potable Water	2704W Building - Steam condensate.	200W	<1
391	d	Potable Water	2704W Building - Steam condensate.	200W	<1
392	d	Potable Water	2704W Building - Steam condensate.	200W	<1

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
389	d	Potable Water	2704W Building - Steam condensate.	200W	< 1
386	d	Potable Water	2704W Building - Steam condensate.	200W	< 1
387	d	Potable Water	2704W Building - Steam condensate.	200W	< 1
388	d	Potable Water	2704W Building - Steam condensate.	200W	< 1
80	c	Potable Water	277W Fabrication Shop - Condensate from compressor. Potential hydrocarbon contamination.	200W	< 5
262	b	Potable Water	Condensate discharged to french drain 216-Z-15.	200W	1
697	d	Potable Water	2345Z Building - PFP Complex main steam line trap #02.	200W	< 0.01
693	d	Potable Water	Steam Trap - 2Q-Yard-MSS-TRP-125. LOCATION: off of steam tie-line between east and west areas, behind 2719WB.	200W	< 1
145	d	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-014- Steam condensate discharged to a french drain that is located in a surface contaminated area. LOCATION: off road next to RR tracks to REDOX.	200W	< 1
146	bd	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-015, 064. LOCATION: on REDOX line near trap #14. Discharges to an underground contaminated area.	200W	< 1
147	b	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-016. LOCATION: steam line on Beliot street from Powerhouse across 19th to REDOX, corner of fence outside REDOX.	200W	< 1

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
131	d	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-031. LOCATION: steam line from Powerhouse beside the road to T-Plant, in front of PFP on 19th avenue.	200W	< 1
152	d	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-052. LOCATION: steam line on Beliot street from Powerhouse on feed line to fabrication shop behind MO-406.	200W	< 1
153	d	Potable Water	Steam Trap 2Q - Yard-MSS-TRP-053. LOCATION: steam line across Beliot street from Powerhouse behind MO-412.	200W	< 1
648	d	Potable Water	Steam Trap 2Q-Yard-MSS-TRP-060 - Steam condensate. LOCATION: line 803 west of 2704W.	200W	< 0.01
261	b	Potable Water	Steam Turbine - Condensate discharged to french drain 216-Z-13.	200W	0.5
263	b	Potable Water	Steam Turbine - Condensate discharged to french drain 216-Z-14.	200W	0.5
696	d	Storm Water	Storm Water Drain, located in the PFP vehicle lock that collects storm water runoff into a 12" pipe and discharges it to a dry well located within the E-field to the north.	200W	< 0.5
405	d	Storm Water	308 Building - Storm water run-off. LOCATION: northeast corner of truck ramp.	300	< 0.01
401	c	Potable Water	3621D Building - Condensate from air receiver. Potential hydrocarbon contamination. LOCATION: east of building, inside fenced area.	300	< 0.01

Table 3-1. Best Management Practice Streams

Stream ¹ No.	Stream ² Category	Source Water	Process Description	Area	Flow ³ (gpm)
402	c	Potable Water	3621D Building - Cooling water from emergency generator diesel engines. Potential hydrocarbon contamination. LOCATION: southwest side of building, in fenced area.	300	<0.01
653	b	Potable Water	366 Building - Steam Trap 2G-Yard-LPD-TRP-054 off steam lines on top of the fuel bunker. There is a potential for fuel oil to contaminate the steam condensate. LOCATION: southwest corner of 366 building.	300	<0.01
342	b	Potable Water	366 Building, fuel oil bunker loading station - Steam trap 2G-Yard-LPD-TRP-55, 56 - potential for fuel oil to contaminate discharge. LOCATION: southeast corner.	300	<0.01
344	b	Potable Water	366 Building, fuel oil bunker loading station - Steam trap 2G-Yard-LPD-TRP -53, 57, 58 - there is a potential for fuel oil to contaminate the steam condensate. LOCATION: southwest corner.	300	<0.1

- Stream No:
Stream number is used to track the stream in the Inventory of Miscellaneous Streams database. These same numbers are also identified in the *Inventory of Miscellaneous Streams*.
- Stream Category:
b = Stream discharging to a disposal site within a surface contaminated area.
c = Potentially contaminated stream.
d = Disposal site within 300 feet of an active/inactive crib, ditch, or trench.
- Flow is an average flow rate per year.

For each BMP stream, the facility proposed a preferred alternative that will either eliminate the waste stream and/or minimize the affect on the environment. Once the preferred alternative is approved by Ecology, it is the responsibility of the facility and/or landlord to fund and implement their preferred alternative in accordance with the schedule described in Section 4.0. Example alternatives are provided in Section 3.2.

3.2 Best Management Practice Alternatives

Examples of alternatives that may eliminate contaminated streams or reduce the level of contamination affecting the groundwater are described in Tables 3-2, 3-3 and 3-5. In general, alternatives are broadly described as either application of source controls or implementation of mechanisms to reroute the stream. Rerouting alternatives may include moving the discharge to another disposal location, moving the source of the discharge (i.e. equipment or process relocation), or collecting the discharge. Source control alternatives may include remediating the contaminated soil, training employees on proper discharge practices, or upgrading equipment to eliminate contaminants.

Selection of a preferred alternative involved consideration of several factors by the responsible facility. Facility personnel identified applicable alternatives for each stream based on location, topography, process generating discharge, contaminants and cost. Specific information regarding alternatives for each stream and the associated costs were evaluated at the facility level and are not provided in this report. Once alternatives were reviewed by facility personnel, a preferred alternative from the tables, or a newly-identified alternative, was proposed for each stream. A preferred alternative may also be a combination of the applications identified in the tables. For example, a facility may want to reroute one contributing waste stream to a process sewer and train personnel on management techniques to prohibit contaminants from entering the remaining stream. The effectiveness of the chosen alternative is the primary concern. In either case, the alternative must eliminate the discharge from meeting the BMP criteria and/or minimize the affect on the environment.

"No further action" may be a possible alternative for a stream. A selection of the no further action alternative includes a justification for that selection. Preferred alternatives are described in Section 3.3 for each stream.

3.2.1 Streams Discharging to Surface Contaminated Areas (Category "b" Streams)

There are 18 active category "b" streams as shown in Table 3-1. The majority of these streams are steam condensate discharges to radioactive surface contaminated areas. Table 3-2 presents examples of alternatives for category "b" streams, or streams discharging to surface contaminated areas. A facility has two primary alternatives: reroute the stream or implement source controls. Rerouting the stream may require directing the stream to an existing clean disposal location, or collecting the discharge and transporting it to a permitted disposal facility (i.e. 200 TEDF, 300 TEDF). Either of these alternatives would inhibit the discharge from further mobilizing contaminants in the soil.

Implementation of a source control may include removing the contaminated soil, evaporating the discharge before it contacts the soil, berming the area to control spills, or eliminating the discharge. Soil cleanup may be a viable alternative depending on the type and amount of contaminants. Evaporation of a stream may be accomplished by placing a wide pan under the discharge and allowing natural evaporation to occur. This may be a viable alternative for small streams discharging during warmer months. Berming could prevent storm water runoff from collecting in contaminated disposal locations. Facility personnel were encouraged to develop other innovative ideas that would prevent discharges from driving existing soil contamination to the groundwater.

Table 3-2. BMP Alternatives for Category "b" Streams.

BMP ALTERNATIVE	APPLICATION	EXAMPLE
Reroute	Reroute Discharge	Reroute discharge to an existing injection well outside of the contaminated area.
	Move Equipment or Process	Move equipment such as steam lines, or process equipment away from the contaminated area.
	Collect and Transport	Install a collection tank and transport the effluent to a permitted disposal facility.
Source Control	Decontamination	Remove or otherwise remediate contaminated soil.
	Evaporation	Use drip or evaporation pans to collect effluent for evaporation.
	Flow Diversion	Berm disposal area to eliminate potential contaminants from coming in contact with disposal stream.
	Elimination	Replace or modify equipment and processes to eliminate discharge.
	Post Signs	"Do Not Discharge in this Area"
	Provide Training	Train personnel to ensure contaminants are disposed of properly.

3.2.2 Potentially Contaminated Streams (Category "c" Streams)

A total of 7 active category "c" streams are described in Table 3-1. Table 3-3 presents examples of alternatives for the potentially contaminated category "c" streams. The alternatives are divided into implementation of rerouting schemes and application of source controls. Rerouting schemes may include collecting the discharge and transporting it to a permitted disposal facility, directing the stream to a process sewer, or merely rerouting the contaminated portion of the discharge.

Numerous source controls exist for potentially contaminated streams. Depending on the stream configuration and the extent of potential contamination, multiple source controls may be needed. Examples of source controls include minimizing contaminants, performing preventive maintenance,

plugging floor drains, moving chemical storage areas away from drains, upgrading equipment, installing signs, and training employees on proper disposal techniques.

Table 3-3. BMP Alternatives for Category "c" Streams.

BMP ALTERNATIVE	APPLICATION	EXAMPLE
Reroute	Collect and Transport	Install a collection tank and transport the effluent to TEDF.
	Reroute to Process Sewer	Reroute the contaminated stream to a process sewer.
	Separate	Reroute the contaminated portion of the stream to an acceptable disposal alternative.
Source Control	Eliminate Discharge	Plug floor drains.
	Install Equipment/Treat stream	Install equipment such as "oil-water separators" to remove potential contaminants.
	Post Signs	"Do Not Dispose of Hazardous Materials In This Injection Well."
	Provide Training	Train personnel to ensure contaminants are disposed of properly.
	Minimize Contaminants	Eliminate additives, clean equipment, and perform preventive maintenance, move chemical storage areas away from drains.

3.2.3 Streams within 91 meters (300 feet) of a Crib, Ditch or Trench (Category "d" Streams)

Table 3-4 lists facilities or sites where category "d" streams occur, the Miscellaneous Stream Inventory number associated with the stream, the crib(s), ditch(es), or trench(es) near the stream, and the distance between the stream and the nearest crib, ditch or trench. A vadose zone modeling document discussing the lateral spreading of plumes below the cribs, ditches and ponds is entitled *Potential Effects of Low Volume Effluent Discharges on Past-Practice Vadose Zone Contamination* (WHC 1996 Draft). Generally, the report verifies that discharges within 91 meters (300 feet) of a crib, ditch or trench may be affecting groundwater by mobilizing contaminants attached to soil particles. There are 49 active streams located within 91 meters (300 feet) of a crib, ditch or trench.

Table 3-4. Summary Table for Category "d" Stream

Associated Facility or Site	Miscellaneous Stream Inventory	Crib, Ditch or Trench Number	Distance to Nearest BMP Stream
B Plant	4	216-B-10A	90 meters
	5	216-B-10A, 216-B-10B	41 meters
	6	216-B-10B	90 meters
	8	216-B-10A	80 meters
PUREX	59	216-A-4, 216-A-2, 216-A-31, 216-A-21	24 meters
	60	216-A-31, 216-A-5, 216-A-2	47 meters
	62	216-A-4, 216-A-2	31 meters
	63	216-A-4, 216-A-2, 216-A-21, 216-A-31	37 meters
	64	216-A-4	83 meters
	65	216-A-32	86 meters
	66	216-A-32	74 meters
	465	216-A-4	89 meters
231Z	131	216-Z-17	80 meters
	510	216-Z-5	91 meters
	511	216-Z-5	91 meters
	565	216-Z-16, 216-Z-5	70 meters
	566	216-Z-16, 216-Z-5	75 meters
	567	216-Z-16	84 meters
	568	216-Z-5, 216-Z-16	90 meters
	569	216-Z-17	48 meters
PFP	233	216-Z-1A, 216-Z-1, 216-Z-2	50 meters
	234	216-Z-1A, 216-Z-1, 216-Z-2	70 meters
	235	216-Z-1A, 216-Z-1, 216-Z-2, 216-Z-3	57 meters
	254	216-Z-17	48 meters

Table 3-4. Summary Table for Category "d" Stream

Associated Facility or Site	Miscellaneous Stream Inventory	Crib, Ditch or Trench Number	Distance to Nearest BMP Stream
PFP (continued)	696	216-Z-17, 216-Z-6	45 meters
	697	216-Z-17, 216-Z-6	74 meters
200W Steam Utilities	152	216-W-LWC	29 meters
	153	216-W-LWC	28 meters
	648	216-W-LWC	75 meters
	693	216-W-LWC	55 meters
2704W	386	216-W-LWC	77 meters
	387	216-W-LWC	68 meters
	388	216-W-LWC	56 meters
	389	216-W-LWC	78 meters
	390	216-W-LWC	87 meters
	391	216-W-LWC	88 meters
	392	216-W-LWC	88 meters
244-AR	117	216-A-9	58 meters
	572	216-A-9	58 meters
	573	216-A-40, 216-A-9	66 meters
	651	216-A-9	67 meters
	657	216-A-9	86 meters
	689	216-A-40	35 meters
222S	203	216-S-20	52 meters
	575	216-S-20	76 meters
	586	216-S-20	41 meters
	145	216-U-16	77 meters
	146	218-W-9, 216-S-9	54 meters
300 Area	405	316-3	44 Meters

Alternatives for category "d" streams, or streams discharging within 91 meters (300 feet) of a contaminated crib, ditch or trench, are presented in Table 3-5. The extent of soil contamination in areas surrounding cribs, ditches and trenches (category "d" streams) often precludes rerouting streams as a generally viable alternative. Use of source controls is dependent on the location and process generating the discharge. Examples of source controls include minimizing the discharge or discontinuing the collection of storm water. For storm water discharges from parking lots, the selection of source controls can consider routine parking lot street sweeping, use of vegetated ditches, or the application of collected storm water to landscapes for irrigation.

Table 3-5. BMP Alternatives for Category "d" Streams.

BMP ALTERNATIVES	APPLICATIONS	EXAMPLE
Reroute	Reroute to Process Sewer	Reroute the stream to a process sewer.
	Reroute Discharge	Reroute the stream outside of the area intersecting with contamination (based on modeling results).
	Collect and Transport	Collect the effluent and transport to a permitted disposal facility.
Source Control	Eliminate Collection	Discontinue collection of storm water
	Clean Areas	Sweep parking lots with storm water runoff.
	Irrigation	Use storm water for irrigation of vegetated areas.
	Label Disposal Area	Post signs "Do Not Discharge in this Area".
	Minimize Use	Minimize the use of the process.
	Evaporation	Use an evaporation pan to collect effluent for evaporation.
	Provide Training	Train personnel to ensure additional discharges do not occur in this area.

3.3 Preferred Alternatives Summary

The BMP streams listed in Table 3-1 are presented in Table 3-6 by process and associated facility location. The preferred alternatives are also provided. Numerous BMP streams have already been eliminated through facility upgrades, reduction of steam usage, and facility shutdowns.

As depicted in Table 3-6, many of the BMP streams are steam condensate discharges. These discharges are located throughout the site along steam transfer lines. These steam lines transport steam from the centralized powerhouses to various buildings. Future plans by DOE-RL regarding the powerhouses and main steam transport lines are currently being evaluated. This effort is part of the DOE-RL Energy Savings Performance Contract (ESPC) proposal. Until the scope and design of the new steam system(s) are developed, it is uncertain which existing steam distribution lines and associated injection wells will remain in use. If existing steam distribution lines are used, the

preferred alternatives for the associated streams will be re-evaluated. The preferred alternative for these streams at this time is no further action.

Another source of the BMP streams is from storm water discharges. Storm water collection discharges are often within 91 meters (300 feet) of a past practice disposal facility. Due to the nature of storm water and the location of the streams, it is not feasible to reroute or eliminate these streams. Each facility selected "no further action" as a preferred alternative for these streams. A justification for each facility's selection is provided following Table 3-6.

Table 3-6. Preferred Alternative Summaries.

BMP Stream Source	Associated Facility Location	Stream Numbers	Preferred Alternative
Steam Condensate	PUREX	59, 60, 61, 62, 63, 64, 65, 66, 465	Future plans by DOE-RL regarding the powerhouses and main steam transport lines are currently being evaluated. This effort is part of the DOE-RL ESFC proposal. Until the scope and design of the new steam system(s) are developed, it is uncertain which existing steam distribution lines and associated injection wells will remain in use. If existing steam distribution lines are used, the preferred alternatives for the associated streams will be re-evaluated. The preferred alternative for these streams at this time is no further action.
	B Plant	4, 5, 6, 8, 660	
	222S	575	
	PFP	234, 235, 254, 261, 263, 697	
	200E/200W Steam Distribution System	131, 145, 146, 147, 152, 153, 648, 693	
	244-AR	117, 572, 573, 651, 657, 689	
	2704W	386, 387, 388, 389, 390, 391, 392	
	366 Building	342, 344, 653	
Storm Water	PFP	696	No further action.
	231Z	565, 566, 567, 568, 569	
	222S	203, 586	
	308 Building	405	
Other Processes	PFP	233, 262	Eliminate sources.
	231Z	510, 511	Collect discharge.
	B Plant	322	Eliminate discharge.
	2715EC Building	223	Install filtration system.
	277W Building	80	Collect discharge.
	3621D Building	401, 402	Collect discharge.

PFP

This small storm drain (696) is located in the security vehicle lock. The drain collects runoff and discharges it to a french drain located between the security fences surrounding the plant. No other effluents besides storm water are discharged to this storm drain. Repaving the vehicle lock to remove the storm drain was evaluated. This alternative would still result in the runoff being discharged to the soil within 300 feet of the Z-17 crib. Rerouting would require excavation inside of the vehicle lock and through the security field. Due to the low volume of effluent, the expense of rerouting the runoff through the security field, and the lack of benefit for repaving, no further action is the preferred alternative.

231Z

Stream numbers 565-569 are storm water injection wells. There is a low volume of storm water collected here. The 231Z Facility is currently vacated and long range plans indicate it will remain vacated. No further action is the preferred alternative.

222S

These are storm water drains (203, 586) located in a access driveway. Traffic is minimal and vehicles do not park in this area for extended periods. In addition, these streams drain to a drainage pit which extends approximately 8 feet below the surface. The location of the pit is southwest of the 216-S-20 crib. Elevation maps indicate that the land slopes slightly to the southeast away from the crib. Operating procedures are in place to help prevent any discharges to the drain other than storm water (i.e., berming potential spill areas, controlling access, etc.) Therefore, no further action is the preferred alternative.

308 Building

Stream 405 collects storm water near the truck ramp located at the 308 Building. The 308 Building is vacated, and the truck ramp is no longer used. There is minimal to no traffic in this area. Due to the low volume of effluent, expense of rerouting, and low traffic in the vicinity, no further action is selected as the preferred alternative for these streams.

The third source in Table 3-6 contains all other processes with potential contamination. Due to the diverse nature of these discharges, each stream and preferred alternative are described below.

PFP

Stream 233 collects steam jacket condensate from the D-9 tank during PFP reclamation facility operation. PFP is currently working on removing the contents of the tank D-9 so the tank can be isolated and removed. This will eliminate the flow to this injection well. The tank isolation is scheduled to be completed by October 1996.

Stream 262 collected condensate and floor drain discharges. Condensate discharge was rerouted. The floor drain will be plugged permanently eliminating all sources to the injection well. The tentative scheduled completion date is May 1997.

231Z

The preferred alternative is to reroute the oil blowdown discharge to an accumulation container for collection. The 231Z Facility is currently vacated and long range plans indicate it will remain vacated; however, there is still a potential for compressor condensate to discharge to injection wells 510 and 511. The accumulation container will be changed out when full and the waste water will be disposed of appropriately. The best location for the accumulation container has not yet been determined. Both injection wells will be eliminated. Scheduled completion date is October 1996.

B Plant

Stream 322 is liquid which accumulates in the B Plant sand filter and drains out through a drain pipe into a french drain. It is expected that the elimination of this stream will be handled through the endpoint criteria process while deactivating B Plant. It is anticipated that elimination of this stream will involve elimination of the source liquid, primarily rain water intrusion, etc. This should be completed with the scheduled completion of B Plant deactivation (currently FY98).

2715EC

Stream 223 collects latex paint wash water from the 2715EC Building. The preferred alternative is to install a filtration system to remove contaminants before discharge to the injection well. Based on performance of available commercial systems, a different type of system may need to be designed and tested. If a system cannot be developed that will adequately remove the contaminants from the stream, the latex brushes and equipment will no longer be cleaned. Equipment will be disposed of after each project rather than cleaning and reusing. Before the filtration system discharge begins, all visible contamination will be removed from the existing injection well, followed by confirmation sampling. The scheduled completion date for this effort is October 1997.

277W

Stream 80 is compressor condensate from the 277W fabrication shop. The preferred alternative is to reroute the discharge piping to an accumulation container to collect the condensate. This effort will be completed by October 1996.

3621D

Streams 401 and 402 are cooling water discharges from the 3621D Building. A collection tank will be installed to collect and transfer discharges to an existing bulge-boy oil/water separator. The scheduled date of completion is December 1996.

Figure 3-1. Location Map for the 200 West Area.

Figure 3-2. Facilities and Stream Discharge Sites Near 231-Z Building.

Figure 3-3. Facilities and Stream Discharge Sites Near the Plutonium Finishing Plant (Z Plant).

LEGEND:

- Building
- Inactive Effluent Disposal Facility
- Miscellaneous Stream Discharge Site
- Well Location
- Steam Line

Figure 3-4. Facilities and Stream Discharge Sites Near 200 West Maintenance Area.

Figure 3-5. Facilities and Stream Discharge Sites East of 241-S and SX Tank Farms.

Figure 3-6. Facilities and Stream Discharge Sites Near 222-S Facility.

Figure 3-7. Location Map for the 200 East Area.

Figure 3-8. Facilities and Stream Discharges Sites Near B Plant.

Figure 3-9. Facilities and Stream Discharge Sites Near PUREX.

Figure 3-10. Facilities and Stream Discharge Sites Near 244-AR.

Figure 3-11. Facilities and Stream Discharge Sites in Southern 300 Area.

Figure 3-12. Facilities and Stream Discharge Sites in Central 300 Area.

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4.0 IMPLEMENTATION SCHEDULE

Activity 6-1.2 in the plan and schedule (DOE-RL 1994) states "Submit the BMP options, the preferred selection and implementation schedule to Ecology for approval." This section describes the implementation schedule. Because there are no existing commitment dates concerning implementation of the preferred alternatives, October 1998 was selected as an internal deadline.

Once all of the preferred alternatives in this document are approved by Ecology, RL will pursue completing implementation by October 1998. As summarized in Table 4-1, the identified implementation dates will occur prior to October 1998. These scheduled dates are projected based on available funding at this time. Because the Energy Savings Performance Contract (ESPC) has not been awarded at the time of this report (which will affect steam condensate discharges), a proposed schedule and definitive design have not yet been received. Therefore, it is not known how the implementation of the contract will affect all of the steam condensate discharges. The preferred alternative for the steam condensate discharges at this time is no further action. A confirmation of the preferred alternative or a re-evaluation of the alternative along with an applicable schedule will be transmitted to Ecology upon RL evaluation of the ESPC schedule and design.

If Ecology does not approve the preferred alternatives in this document, the implementation schedule of subsequent BMPs may require additional time depending on available funding.

Table 4-1. Implementation Schedule Summary.

Process	Associated Facility Location	Stream Numbers	Preferred Alternative	Scheduled Implementation		
Steam	PUREX	59, 60, 61, 62, 63, 64, 65, 66, 465	Future plans by DOE-RL regarding the powerhouses and main steam transport lines are currently being evaluated. This effort is part of the DOE-RL ESPC proposal. Until the scope and design of the new steam system(s) are developed, it is uncertain which existing steam distribution lines and associated injection wells will remain in use. If existing steam distribution lines are used, the preferred alternatives for the associated streams will be re-evaluated. The preferred alternative for these streams at this time is no further action.	See Section 4.0		
	B Plant	4, 5, 6, 8, 660				
222S	575					
PFP	234, 235, 254, 261, 263, 697					
200E/200W Steam Distribution System	131, 145, 146, 147, 152, 153, 648, 693					
244-AR	117, 572, 573, 651, 657, 689					
2704W	386, 387, 388, 389, 390, 391, 392					
366 Building	342, 344, 653					
Storm Water	PFP	696			No further action.	N/A
	231Z	565, 566, 567, 568, 569				
	222S	203, 586				
	308 Building	405				
Other Processes	PFP	233, 262	Eliminate sources.	233: October 1996 262: May 1997		
	231Z	510, 511	Collect discharge.	October 1996		
	B Plant	322	Eliminate discharge.	September 1998		
	2715EC Building	223	Install filtration system.	October 1997		
	277W Building	80	Collect discharge.	October 1996		
	3621D Building	401, 402	Collect discharge.	December 1996		

5.0 REFERENCES

- DOE-RL, 1987, *Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site*, DOE-065, Response to Congressional Request, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- WHC, 1996 Draft, *Potential Effects of Low Volume Effluent Discharges on Past-Practice Vadose Zone Contamination*, WHC-SD-LEF-ER-001 Draft, Westinghouse Hanford Company, Richland, Washington.

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APPENDIX A

**REVISIONS TO THE ORIGINAL LIST
OF STREAMS REQUIRING BMPs**

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Miscellaneous Streams Inventory

In accordance with the provisions of the plan and schedule, Activity 6-1.1 (DOE-RL 1994), a list of 96 streams meeting the BMP criteria was submitted to Ecology in May 1995. Currently, there are 63 streams meeting one or more of the criteria specified in the plan and schedule as potentially affecting groundwater as depicted in Table 3-1. These streams are referred to as BMP streams. Table A-1 lists 69 streams that have been removed from the original BMP list. These streams have been eliminated, rerouted, or identified as a duplicate of another stream since the original list was submitted. This has largely been accomplished through the use of maps generated by new software to verify the location of streams. Using this software, duplicates can be identified and accurate distances from cribs, ditches and trenches can be measured. In addition, 35 streams have been added to the BMP list for the same reasons. These streams are depicted in Table A-2.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
18	491E Heat Transport Building, east side - Storm water off roof of HTS-E and condensate from HVAC system.	400	REVISED 2/26/95: "c" note removed.
19	408 South dump heat exchanger and 491-W Heat Transport Building, west side - Storm water	400	REVISED 2/26/95: "c" note removed.
48	242AC Pipefitter's Shop: three discharge lines to disposal site (242AC steam condensate, pipefitter storage skid shack condensate, stream #50 steam trap).	200E	ELIMINATED 2/26/96.
57	202A PUREX, west side - Steam condensate line #8801.	200E	REVISED 3/96: "d" note removed; not within 300 ft.
67	202A PUREX; north corner, in the exclusion zone - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.
68	202A PUREX; north side, next to the north wall of 206A fractionator - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.
69	202A PUREX; north side, on the west wall of the laboratory sample receiving dock - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.
70	202A PUREX; north side, between 203A UNH pumphouse and MO332 - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.
71	202A PUREX; north side, on the north side of TK-P3 containment dike, in the exclusion zone - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
72	202A PUREX; north side, on the NW corner of 211A storage tanks, between TK-41 and 211A chemical access track - Steam condensate line #8801.	200E	REVISED 10/95: "d" note removed.
118	242A Building. Injection well receives steam condensate from two steam traps and a relief valve (PSV-EA1-1), SW of 242A Evaporator.	200E	DELETED 8/22/95: duplicate of #652.
119	242A Building - Steam trap	200E	DELETED 8/22/95: stream discharges into stream #118.
138	Steam Trap 2Q - Yard-MSS-TRP-003, 063 - Steam condensate discharged to french drain.	200W	REVISED 12/6/95: "b" note removed.
141	Steam Trap 2Q - Yard-MSS-TRP-006. LOCATION: behind UO3.	200W	REVISED 12/95: "b" note removed.
142	Steam Trap 2Q - Yard-MSS-TRP-007- Steam condensate discharged to a french drain. LOCATION: corner of UO3 off 16th Street.	200W	REVISED 12/95: "b" note removed.
200	222S Building, near door 15 north - Steam condensate.	200W	REVISED 12/7/95: "d" note removed.
201	222SC Building, north side - Steam condensate.	200W	REVISED 12/7/95: "d" note removed.
202	219S Building, north side - Steam condensate.	200W	ELIMINATED 4/96.
204	222S Building, parking lot - Catch Basin (storm drain) #01.	200W	REVISED 12/7/95: "d" note removed.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
205	222S Building, parking lot - Catch Basin (storm drain) #02.	200W	REVISED 12/7/95: "d" note removed.
206	222S Building, parking lot - Catch Basin (storm drain) #03.	200W	REVISED 12/7/95: "d" note removed.
207	222S Building, parking lot - Catch Basin (storm drain) #04.	200W	REVISED 6/95: "d" note removed.
208	222S Building, parking lot - Catch Basin (storm drain) #05.	200W	REVISED 11/27/95: "d" note removed.
209	222S Building, parking lot - Catch Basin (storm drain) #06.	200W	REVISED 11/27/95: "d" note removed.
210	222S Building, parking lot - Catch Basin (storm drain) #07.	200W	REVISED 11/27/95: "d" note removed.
211	222S Building, parking lot - Catch Basin (storm drain) #08.	200W	REVISED 11/27/95: "d" note removed.
212	222S Building, parking lot - Catch Basin (storm drain) #10.	200W	REVISED 11/27/95: "d" note removed.
213	222S Building, parking lot - Catch Basin (storm drain) #11.	200W	REVISED 11/27/95: "d" note removed.
214	222S Building, parking lot - Catch Basin (storm drain) #12.	200W	REVISED 11/27/95: "d" note removed.
215	222S Building, parking lot - Catch Basin (storm drain) #13.	200W	REVISED 11/27/95: "d" note removed.
216	222S Building, south - Catch Basin (storm drain).	200W	REVISED 11/27/95: "d" note removed.
217	222S Building, south - Catch Basin (storm drain).	200W	REVISED 11/27/95: "d" note removed.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
220	241A Tank Farm Steam Condensate - Steam condensate is discharged year-round to a caisson located in a surface contaminated area. LOCATION: under the over ground steam line between AY-Farm and 241-A-702.	200E	ELIMINATED 10/26/95.
222	S/SX/SY/242S Complex - Steam condensate; steam condensate discharged year-round to caisson located within a surface contaminated area. LOCATION: outside perimeter fence, on east side of 242-S.	200W	ELIMINATED 5/95.
232	241Z Building - Eyewash/safety shower. LOCATION: East side of 241Z.	200W	ELIMINATED.
236	241Z Building - Waste tanks steam supply trap.	200W	DELETED 11/30/95: This stream discharges to the same disposal site as stream # 235.
237	241Z Building - Waste tanks steam supply trap.	200W	DELETED 11/30/95: This stream discharges to the same disposal site as stream #235.
238	241Z Building - Waste tanks steam supply trap.	200W	DELETED 11/30/95: This stream discharges to the same disposal site as stream #235.
239	241Z Building - Waste tanks steam supply trap.	200W	DELETED 11/30/95: This stream discharges to the same disposal site as stream #235.
255	231Z Building - Air intake corridor storm drains.	200W	REVISED 11/30/95: "d" note removed.
256	231Z Building - Air intake corridor storm drains.	200W	REVISED 11/30/95: "d" note removed.
257	231Z Building - Air intake corridor storm drains.	200W	REVISED 11/30/95: "d" note removed.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
258	231Z Building - Main steam line trap #01.	200W	ELIMINATED 11/30/95: building steam shutoff.
260	231Z Building - Stack demister condensate drain.	200W	ELIMINATED 11/30/95: building steam shut off.
317	276C Building - Steam condensate; batch discharged during winter. LOCATION: east side.	200E	ELIMINATED 8/30/95.
461	202A Building - PUREX storm water. LOCATION: south side of building, connected to the proportional sample pit #04.	200E	ELIMINATED 4/96: system is inactive.
464	202A Building - PUREX steam condensate, discharged into a contaminated area. LOCATION: south side of building, across the access road from the 291A exhaust fans.	200E	ELIMINATED 4/96.
466	202A Building - PUREX steam condensate. LOCATION: south side of building, adjacent to the southeast corner.	200E	ELIMINATED 4/96.
540	224B Building - Elevator shaft - There is no anticipated discharge, used in emergencies only. Historically, raw water line broke and drained into the elevator shaft.	200E	DELETED 4/96: Stream is not a misc. stream.
547	242A Building - Injection well receives effluent from the 242-A-2, 242-A-3, 242-A-4 steam traps, and PRV-EA1-1. LOCATION: SW corner of 242-A.	200E	REVISED 10/26/95: "d" note deleted.
548	242A Building, 242-A-3 Steam trap	200E	DELETED 7/6/95: discharges into stream #547.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
549	241-SY Tank Farm - Steam pit discharges to a caisson east of 241-SY-103. LOCATION: northeast of the exhaustor (west of 103-SY).	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-16.
550	241-SY Tank Farm - Steam pit. East of 241-SY-271.	200W	ELIMINATED 5/95: steam supply was blanked at MSS-V-16.
551	296-S-15 (Sludge Cooler) - Steam heater discharging to a dry well (caisson). LOCATION: inside SX Farm.	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-17.
552	241-SX-401 Tank Farm Vapor Manifold Condenser - Steam condensate and condenser sampler line discharge to dry well (caisson). LOCATION: inside SX farm.	200W	ELIMINATED 5/95: steam supply eliminated in the late 1970s.
553	241-SX-402 Tank Farm Vapor Manifold Condenser - Condenser sampler line discharging to dry well (caisson). LOCATION: inside SX Farm.	200W	ELIMINATED 5/95: steam supply was eliminated in the late 1970s.
554	241-SX Tank Farm - Steam discharge to a caisson.	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-17.
555	241-SX Tank Farm - Steam discharge to a caisson.	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-17.
556	241-SX Tank Farm - Steam discharge to a caisson.	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-17.
557	241-SX Tank Farm - Steam discharge to a caisson.	200W	ELIMINATED 5/95: steam supply was blanked at valve MSS-V-17.
562	242A Building, 242-A-4 Steam Trap.	200W	DELETED: stream discharges into stream #547.
576	222S Building - Steam condensate. LOCATION: north of door 15, near roadway.	200W	REVISED 11/27/95: "d" note removed.

Table A-1. Streams Removed from Original BMP List.

Stream #	Process Description	Area	Comments
581	222S Building - Injection well receives overflow storm water from stream numbers 212, 216, and 217. LOCATION: south of parking area between road and the fence.	200W	REVISED 11/27/95: "d" note removed.
582	222S Building - Catch Basin (storm drain). This catch basin overflows to the gravel-filled drainage pit in stream #586.	200W	DELETED 5/95: stream is a duplicate of stream #203.
583	2704S Building - HVAC condensate. LOCATION: southwest corner of west wing of building.	200W	REVISED 12/7/95: "d" note removed.
584	222S Building - drain line collects overflow storm water from catch basin #6 and #8. Drain line is a 100', 15" dia. perforated corrugated metal pipe. LOCATION: 20' west of catch basin #6.	200W	REVISED 12/7/95: "d" note removed.
585	2704S Building - tile field collects overflow storm water from catch basins #1, #2, #3, #4, #5, and #7. LOCATION: northwest of building, just north of parking lot.	200W	REVISED 4/96: "d" note was removed.
587	2345Z Building - PFP Complex main steam line trap #2.	200W	ELIMINATED 6/95.
654	2734ZL Building - Emergency Eyewash Station. LOCATION: center of the south side of building.	200W	ELIMINATED 4/96: system was eliminated.

Table A-2. Streams Added to Original BMP List.

Stream #	Process Description	Area	Comments
4	B Plant Yard Steam Line - Ten inch main, steam trap condensate.	200E	REVISED 8/28/95: "d" noted added.
5	B Plant Yard Steam Line - Eight inch main, steam trap condensate.	200E	REVISED 8/28/95: "d" note added.
6	B Plant Yard Steam Line - Eight inch main, steam trap condensate.	200E	REVISED 8/28/95: "d" note added.
8	292B Building - B Plant yard steam line, three inch line to 292-B, steam trap condensate.	200E	REVISED 8/28/95: "d" note added.
117	Steam Trap 2P - Yard-MSS-TRP-042, north of 275EA.	200E	INACTIVE 12/6/95: steam will only be supplied as needed during 244-AR operation.
131	Steam Trap 2Q - Yard-MSS-TRP-031. LOCATION: in front of PFP on 19th avenue.	200W	REVISED 12/27/95: "d" note added.
147	Steam Trap 2Q - Yard-MSS-TRP-016. LOCATION: steam line on Beliot street from Powerhouse across 19th to REDOX, corner of fence outside REDOX.	200W	REVISED 5/96: "b" note added. Discharge is adjacent to a surface contaminated area.
152	Steam Trap 2Q - Yard-MSS-TRP-052. LOCATION: steam line across Beliot street from Powerhouse on feed line to fabrication shop behind MO-406.	200W	REVISED 11/27/95: "d" note added.
153	Steam Trap 2Q - Yard-MSS-TRP-053. LOCATION: steam line across Beliot street from Powerhouse behind MO-412.	200W	REVISED 11/27/95: "d" note added.
322	291B Building - Plant Canyon Exhaust Sand Filter Drain - Drains liquid effluent in filter bank if waterproofing seal fails.	200E	REVISED. "c" note added.

Table A-2. Streams Added to Original BMP List.

Stream #	Process Description	Area	Comments
344	366 Building, fuel oil bunker loading station - Steam trap 2G-Yard-LPD-TRP-53, 57, 58 - there is a potential for fuel oil to contaminate the steam condensate. LOCATION: southwest corner.	300	REVISED 2/26/96: "b" note added.
386	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
387	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
388	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
389	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
390	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
391	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
392	2704W Building - Steam condensate.	200W	REVISED 11/27/95: "d" note added.
405	308 Building - Storm water run-off. LOCATION: northeast corner of truck ramp.	300	REVISED 11/30/95: "d" note added.
565	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	REVISED 11/30/95: "d" note added. Within 300' of 216-Z-5, and -16.
566	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	REVISED 11/30/95: "d" note added. Within 300' of 216-Z-5, and -16.
567	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	REVISED 11/30/95: "d" note added. Within 300' of 216-Z-5, and -16.

Table A-2. Streams Added to Original BMP List.

Stream #	Process Description	Area	Comments
568	231Z Building - Storm water. LOCATION: in space between two walls on west side of building.	200W	REVISED 11/30/95: "d" note added. Within 300' of 216-Z-5, and -16.
569	231Z Building - Storm water. LOCATION: approximately 10' east of front door of building.	200W	REVISED 11/30/95: "d" note added.
572	Steam Trap 2P - Yard-MSS-TRP-043. LOCATION: north of 275EA.	200E	INACTIVE 12/6/95: steam will only be supplied as needed during 244-AR activities.
573	Steam Trap 2P - Yard-MSS-TRP-044. LOCATION: west of 244AR.	200E	INACTIVE 12/6/95: steam will only be supplied during 244-AR activities.
648	Steam Trap 2Q-Yard-MSS-TRP-060 - Steam condensate. LOCATION: line 803 west of 2704W.	200W	REVISED 12/7/95: "d" note added.
651	Steam Trap 2P - Yard-MSS-TRP-052, TRP-053 - Steam condensate. Both traps discharge into one injection well. LOCATION: northwest of 204-AR, 241AW.	200E	INACTIVE 6/4/96: steam will only be supplied as needed during 244-AR activities. Labelled 204AR-1, 242-1.
653	366 Building - Steam Trap 2G-Yard-LPD-TRP-054 off steam lines on top of the fuel bunker. There is a potential for fuel oil to contaminate the steam condensate. LOCATION: southwest corner of 366 building.	300	REVISED 2/26/96: "b" note added.
657	204-AR Steam Trap and compressor condensate.	200E	REVISED 6/4/96.
660	West side of K-3 Filter. Injection well, located below emergency steam jet, receives steam condensate.	200E	REVISED 8/28/95: "c" note added.

Table A-2. Streams Added to Original BMP List.

Stream #	Process Description	Area	Comments
689	244-AR vessel vent stack steam supply - steam blowdown line in a caisson.	200E	INACTIVE 6/4/96: steam will only be supplied as needed during 244-AR activities.
693	Steam Trap - 2Q-Yard-MSS-TRP-125. LOCATION: off of steam tie-line between east and west areas, behind 2719WB.	200W	REVISED 11/27/95: "d" note added.
696	Storm Water Drain, located in the PFP vehicle lock that collects storm water runoff into a 12" pipe and discharges it to a dry well located within the E-field to the north.	200W	REVISED 3/96: "d" note added. Within 300' of Z-17 and Z-6 Crib.
697	2345Z building - PFP Complex main steam line trap #02.	200W	REVISED 3/96.

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