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To	From	Page 2 of 2
DISTRIBUTION	LEF Environmental Engineering and Regulatory Compliance	Date 11/15/94
Project Title/Work Order WHC-SD-W049H-ICD-001 Rev. 1, "200 Area TEDF Interface Control Document"		EDT No. ECN No. 192510

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
AS McCabe	T3-28	X			
EA McNamar	T7-39	X			
PC Mohondro	T7-39	X			
TW Moon	H6-25	X			
MW Peres	T7-39	X			
JA Rivera	B2-16				X
LD Salsberry	E6-03				X
JS Stair	S2-66	X			
NJ Sullivan	S5-11	X			
TL Sweet	T1-06	X			
FJ Ulmer	S5-11	X			
RD Warriner	T7-38	X			
GJ Warwick	T6-12	X			
BF Weaver	T7-38	X			
DL Wiegand	S6-17	X			
RD Weissenfels	S6-70	X			
CD Wollam	S6-17	X			
MS Wright	T3-28				X
RB Wurz	S5-11	X			
AK Yoakum	S5-11	X			
CJ Geier (ECO)	R2-36	X			
CENTRAL FILES	L8-04	X			
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A-6000-135 (01/93) WEF067

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To	From	Page 1 of 2
DISTRIBUTION	LEF Environmental Engineering and Regulatory Compliance	Date 11/15/94
Project Title/Work Order		EDT No.
WHC-SD-W049H-ICD-001 Rev 1, "200 Area TEDF Interface Control Document"		ECN No. 192510

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
WC Alaconis	R3-28	X			
MA Arntzen	H6-25	X			
RW Bailey	S5-66				X
NA Ballantyne	T7-39	X			
TS Basra	R1-51	X			
JT Belcher	T3-36	X			
LT Blackford	T3-28				X
SL Brey	T6-12	X			
MJ Brown	T7-39	X			
AF Crane	T7-39	X			
PJ Crane (ECO)	T3-28	X			
JR Cooper	H4-19	X			
PJ Davis-Vedder	H6-22	X			
LP Diediker	T1-30	X			
SE Dieterle	S2-21				X
AJ Diliberto	H6-32	X			
DP Fassett	T3-28				X
DL Flyckt	T7-39	X			
JE Geary	S5-01	X			
LD Goodwin	T6-12	X			
RR Grabbe	S3-28	X			
JU Greenough	S2-61	X			
RD Gustavson	R1-51	X			
MJ Hall (ECO)	T6-07	X			
DR Herman (ECO)	S2-12	X			
RA Hildebrand	T7-39	X			
DR Hirzel	T5-54	X			
PG Haigh	T7-39	X			
MN Islam	R3-08				X
OM Jaka	R3-08	X			
RE Johnson	T1-30	X			
RJ Julian	S6-65	X			
FM Jungfleisch	T7-39	X			
SE Killoy (acting ECO)	S6-70	X			
JA Koerner	T7-39	X			
CM Kronvall	T5-53	X			
GJ Lebaron	S6-19	X			
SJ Leclair	S6-76	X			
KJ Lueck	H6-28	X			
RP Marshall	T6-14				X
DJ McBride (ECO)	T5-54	X			

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 192510

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.		4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	M.J. Brown, R.A. Hildebrand, Liquid Effluent Facility Environmental Engineering/Regulatory Compliance, T7-38, 327-2972		11/30/94
	5. Project Title/No./Work Order No. 200 Area TEDF Interface Control Document	6. Bldg./Sys./Fac. No. TEDF	7. Approval Designator ESQ.
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-W049H-ICD-001 Rev 1	9. Related ECN No(s).	10. Related PO No.

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	N/A	Cog. Engineer Signature & Date	Cog. Engineer Signature & Date

12. Description of Change

This revision, focuses on the Treated Effluent Disposal Facility (TEDF) operations and does not consider TEDF design, construction, and start-up, as did Revision 0. The requirements found in this document are based on (1) the 240 Engineering Report (WHC 1992); and (2) the anticipated 216 Permit. This revision eliminates a Sampling Analysis Plan (SAP) and a Liquid Effluent Certification Plan from the generators. The SAPs will be replaced by the LEF Sample Schedule (WHC 1995a). The Certification Plan will be replaced by new requirements in the Environmental Compliance Manual (WHC 1988) and verification assessments.

13a. Justification (mark one)			
As-Found []	Criteria Change []	Design Improvement []	Environmental [X]
	Facilitate Const. []	Const. Error/Omission []	Design Error/Omission []

13b. Justification Details

N/A

14. Distribution (include name, MSIN, and no. of copies)

See Distribution Sheet

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A-7900-013-2 (06/94) GEF095

A-7900-013-1 (06/92)

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1)
192510

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision

20. Approvals

Cog. Eng. M.J. Brown 11/21/94
Cog. Mgr. D.L. Flyckt 11/21/94
QA ~~L.D. Salsbery~~ 11/23/94 M.A. Arntzen 11/23/94
Safety O.M. Jaka ~~M.N. Islam~~ 11/21/94 11/21/94
Environ. L.P. Diedecker 11/28/94
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LEF Process Engineering A.F. Crane 11/21/94
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LEF Operations Manager A.K. Yoakum 11/22/94
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C.M. Kronvall 11/23/94
222-S L.D. Goodwin 11/28/94
S.L. Brey 11/28/94
R.P. Marshall 11/28/94
M.J. Hall 11/28/94
T-Plant P.J. Crane 11/22/94
M.S. Wright
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284-W D.R. Herman 11/28/94
T.S. Sweet 11/28/94
J.S. Stair 11/28/94
S.E. Dieterle 11/28/94
B-Plant R.D. Weissenfels 11/22/94
R.J. Julian 11/22/94
[redacted]

PUREX D.L Wiegand 11/22/94
C.D. Wollam 11/22/94
G.J. Lebarron 11/22/94
R.W. Bailey 11/22/94
242-A-81 R.D. Gustavson 11/21/94
C.J. Geier 11/23/94
J.E. Geary 11/22/94
WESCF R.R. Grabbe 11-28-94

DEPARTMENT OF ENERGY 11/22/94

Signature or a Control Number that tracks the Approval Signature

RELEASE AUTHORIZATION

Document Number: WHC-SD-W049H-ICD-001, REV.1

Document Title: 200 Area TEDF Interface Control Document

Release Date: November 29, 1994

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz — November 29, 1994

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SUPPORTING DOCUMENT

1. Total Pages	80
2. Title	200 Area TEDF Interface Control Document
3. Number	WHC-SD-W049H-ICD-001
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6. Author	Names: M.J. Brown/R.A. Hildebrand
Signature	M.J. Brown / R.A. Hildebrand 11/24
Organization/Charge Code	86270/A2145

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7. Abstract

Because the TEDF does not have any treatment or retention capacity, strict control at the generator interface is essential to operate the TEDF in compliance with good engineering practices, Hanford site requirements, and the 216 Discharge Permit.

The information in the Interface Control Document (ICD) forms the basis of understanding between all parties involved in the TEDF; DOE, WHC, and the generating facilities. The ICD defines the controlling document hierarchy; LEF, and generator responsibilities; monitoring and sampling requirements; and specifies the TEDF/Generator Interface points.

8. RELEASE STAMP

OFFICIAL RELEASE BY WHC (2)
DATE NOV 29 1994
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RECORD OF REVISION	(1) Document Number WHC-SD-W049H-ICD-001 Rev 1	Page 1

(2) Title
200 AREA TREATED EFFLUENT DISPOSAL FACILITY INTERFACE CONTROL DOCUMENT

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release (5) Cog. Engr.	(6) Cog. Mgr. Date
RS 0	EDT-133334		
1	(7) Revise per ECN# 192510	[illegible]	[illegible] 11/29/[illegible]

A-7320-005 (08/91) WEF168

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF TERMS

ARP	Alarm Response Procedure
BAT/AKART	Best Available Technology/All Known, Available, and Reasonable Treatment
DOE-RL	U. S. Department of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
ECM	Environmental Compliance Manual
EM	Effluent Monitoring
EPA	Environmental Protection Agency
EOP	end of pipe
FDC	Functional Design Criteria
ICD	Interface Control Document
LEF	200 Area Liquid Effluent Facilities
LEMIS	Liquid Effluent Monitoring Information System
LCU	Local Control Unit
MCS	Monitoring and Control System
OSD	Operation Specification Document
OTP	Operation Test Procedures
PFP	Plutonium Finishing Plant
PMP	Plant maintenance procedures
POP	Plant operating procedures
PUREX	Plutonium-Uranium Extraction
SAP	Sampling Analysis Plan
TEDF	Treated Effluent Disposal Facility
WAC	*Washington Administrative Code*
WHC	Westinghouse Hanford Company
WSCF	Waste Sampling and Characterization Facility

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200 AREA TREATED EFFLUENT DISPOSAL FACILITY INTERFACE CONTROL DOCUMENT

1.0 INTRODUCTION

Because the 200 Area Treated Effluent Disposal Facility (TEDF) does not have any treatment or retention capacity, strict control at the generator interface is essential to operate the TEDF in compliance with good engineering practices, Hanford Site requirements (DOE-RL 1988a, DOE-RL 1988b, WHC-CM-7-5), and the requirements of *Washington Administrative Code* (WAC) 173-216, "State Waste Discharge Permit" (216 Permit). To that end, the 200 Area TEDF Interface Control Document (ICD) was developed to define the requirements and responsibilities for all parties supporting TEDF operation.

1.1 SCOPE

The focus of this ICD is to identify the requirements and responsibilities for all parties to operate the TEDF. This information forms the basis of understanding between all parties; DOE, WHC, and facilities.

The TEDF is composed of the piping system, along with supporting structures, components (e.g., pumps), and instrumentation that extends from the generator/TEDF interface point up to and including the Disposal Ponds. This document does not include the requirements for groundwater monitoring at the Disposal Ponds. The requirements in this document provide for continuous monitoring, sampling, upset condition notification, interface points, implementing procedures, and configuration control.

The generators are composed of the seven facilities generating nine liquid waste streams listed in Table 1. The physical area layout of these generators is shown in Figure 1. In addition to the generators, the responsible parties include the Liquid Effluent Facility (LEF) organization, which will operate the TEDF. The LEF groups that have responsibilities associated with this document include the Regulatory Compliance/Environmental Engineering group, the Process Engineering group, and the Facility Operations group. The support organizations that make up the responsible parties include the Environmental Compliance Assurance group and the Effluent Emissions Monitoring group of Environmental Services for performing compliance assessments and audits. Analytical Services will provide analytical laboratory support.

1.2 BACKGROUND

The TEDF was constructed under Project W-049H to comply with Consent Order No. DE 91NM-177 (Ecology and DOE-RL 1991). The supporting documents for this effort include the *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report* (WHC 1992a); *Functional Design Criteria for the 200 Area Treated Effluent Disposal Facility Project W-049H* (WHC 1992b); and *Functional Design Criteria for Project W-291H 200 Area Effluent BAT/AKART Implementation* (WHC 1993).

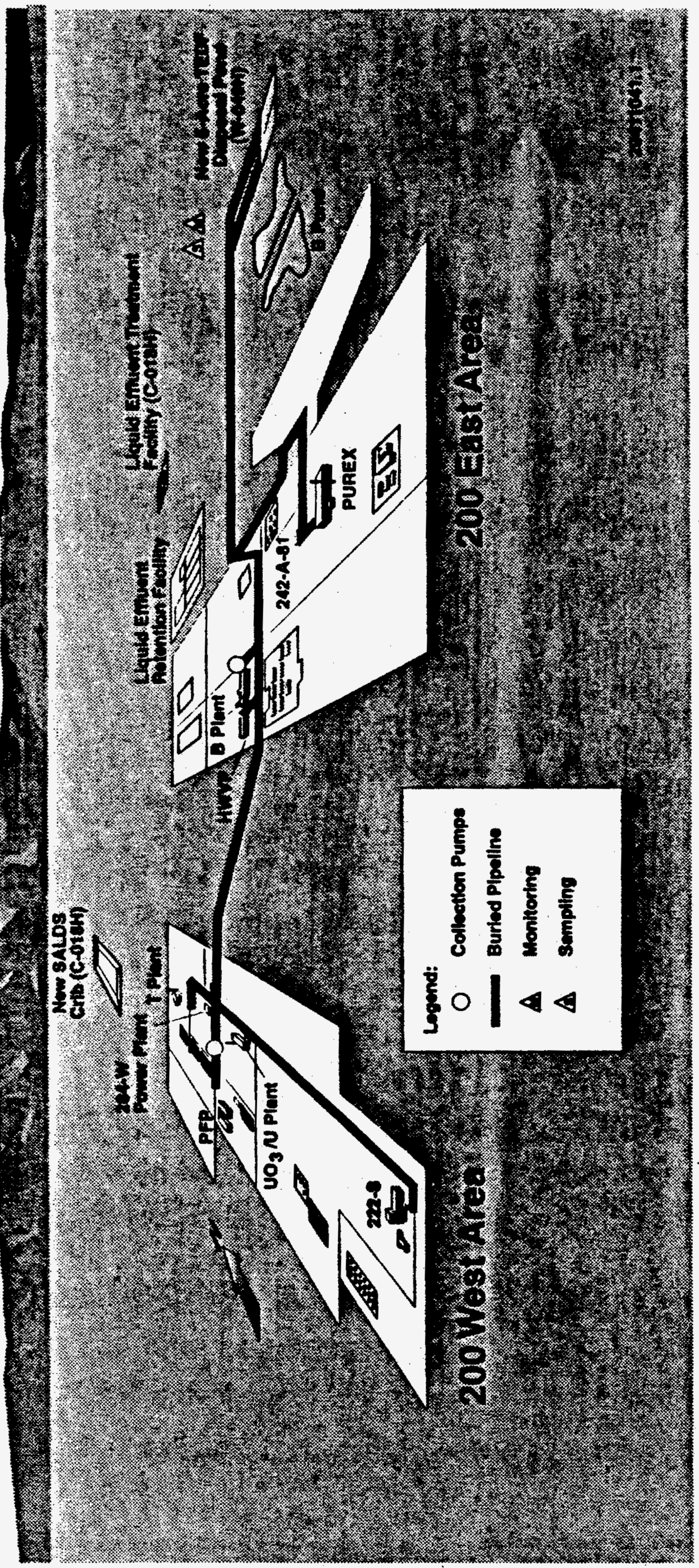
Table 1. Treated Effluent Disposal Facility Generators[1].

Facility	Waste stream
Plutonium Finishing Plant (PFP)	PFP waste water
222-S Laboratory	222-S Laboratory waste water
T Plant	T Plant waste water (including T Plant Laboratory waste water)
284-W Power Plant	284-W Power Plant waste water
Plutonium-Uranium Extraction (PUREX) Plant	PUREX chemical sewer
B Plant	B Plant chemical sewer
	B Plant process condensate[2]
	B Plant steam condensate[2]
242-A Evaporator	242-A-81 Water Services Building waste water

[1]The basis for this table is the 216 Permit Application (DOE-RL 1994). Changes are noted.

[2]While streams have no flow and are not expected to operate in the near future, they are included because they are part of the 216 Permit Application (DOE-RL 1994).

Figure 1. 200 Area Treated Effluent Disposal Facility Map.



This document, which is a revision of the previous ICD (WHC 1992c), focuses on TEDF operations without considering the TEDF design, construction, and start-up in defining the responsibilities and requirements for the responsible parties. The requirements found in this document are based on (1) the 240 Engineering document (WHC 1992a); and (2) the anticipated conditions of the 216 Permit. This revision does not require Sampling and Analysis Plans (SAP) and Liquid Effluent Certification Plans from generators, which were required by the previous version of the ICD. The SAPs will be replaced by the LEF Sample Schedule (WHC 1995a) and the LEF Quality Assurance Program Plan (QAPP) (WHC 1995b). The Certification Plans will be replaced by new requirements in the *Environmental Compliance Manual* (WHC-CM-7-5) and verification audits.

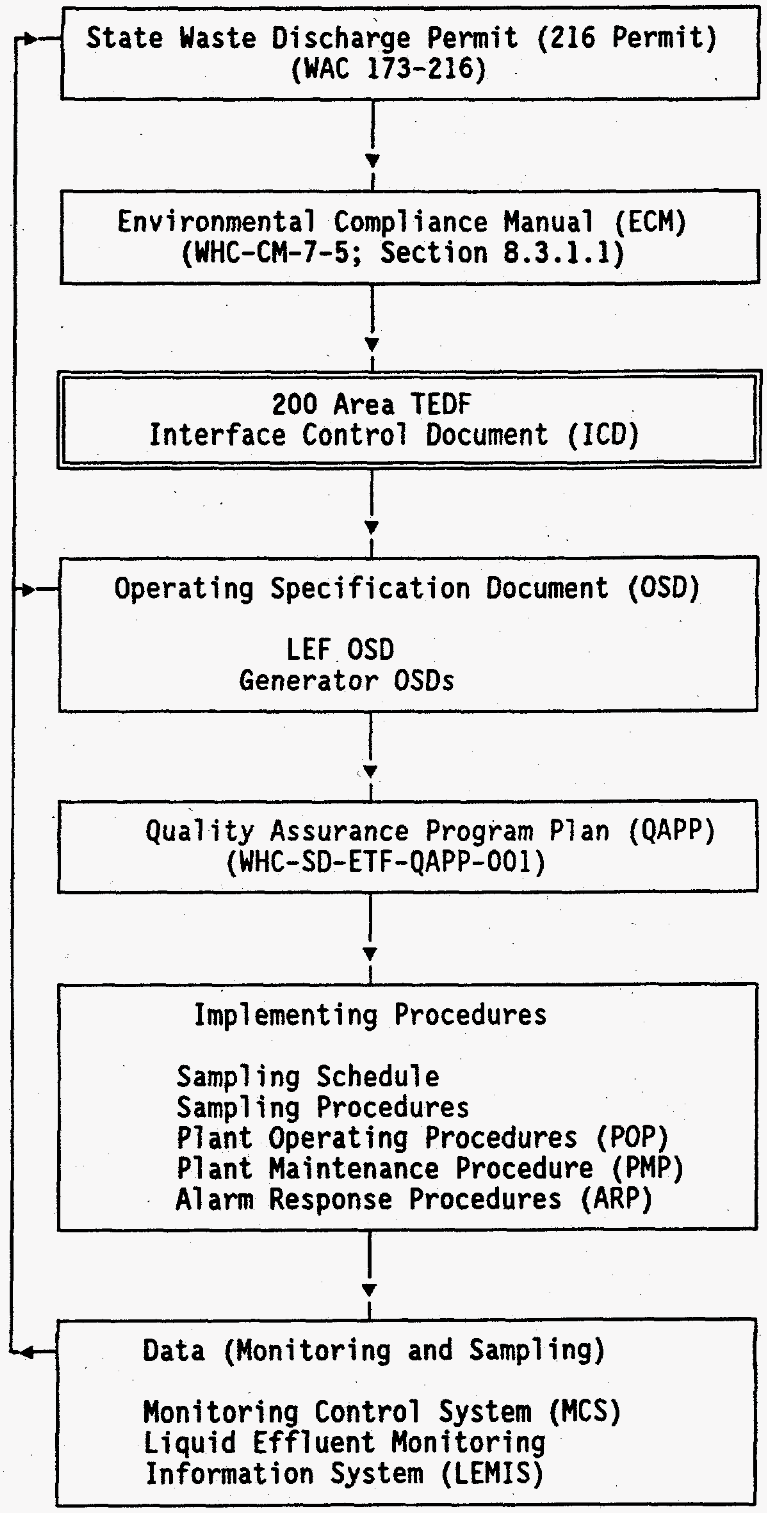
1.3 IMPLEMENTATION

The operation of the TEDF will be controlled by the document hierarchy shown in Figure 2. Within this hierarchy, the 216 Permit is the controlling document. The requirements to comply with this permit will be incorporated into Section 8 of the *Environmental Compliance Manual* (WHC-CM-7-5).

The specific requirements for the LEF, Generators, and other parties needed to meet the overall requirements of the 216 Permit will be reflected in this ICD. Because the 216 Permit will not be finalized until Spring 1995, further revisions may be necessary. The generator-specific requirements and responsibilities, as well as those for the LEF groups that are outlined in the ICD will in turn be reflected in the facility-specific Operating Specification Documents (OSDs). The sampling schedule, plant operating procedures (POP), plant maintenance procedures (PMP), and alarm response procedures (ARP) will be the field mechanisms for actual implementation of the requirements and responsibilities. Data collected from monitoring and sampling activities required by the ICD and 216 Permit will be used (1) to verify permit compliance and (2) as necessary for future 216 Permit and OSD revisions. Sampling that is done pursuant to Sampling Analysis Plans (SAP) for Interim Compliance Program and for the Annual Release Report will be replaced by the sampling of this document program.

Prior to discharge, each facility that discharges to TEDF shall comply with DOE Order 5480.31 to verify their readiness to discharge. It is the responsibility of each generating facility to ensure that all appropriate procedures for normal, upset, and emergency conditions are in place no later than May 1, 1995. The generators will prepare a certification package, which demonstrates that the required upgrades have been implemented according to the Best Available Technology/All Known, Available, and Reasonable Treatment provisions of Appendix A and the 240 Engineering Report (WHC 1992a). The generators must also demonstrate that they have met the requirements of this ICD.

Figure 2. Controlling Document Hierarchy.



2.0 200 AREA LIQUID EFFLUENT FACILITIES RESPONSIBILITIES

This section outlines the general and operation-specific responsibilities of the 200 Area LEF.

2.1 GENERAL

The general responsibilities of the LEF include the following.

(a) Establish and maintain this ICD to ensure consistency with 216 Permit and ECM (Figure 2).

(b) Establish and maintain the QAPP (WHC 1995b).

(c) Establish 200 Area LEF Sampling Schedule (WHC 1995a). Review each March and change as needed the LEF sampling schedule and Minimum Generator Sampling Requirements (see Table 2).

(d) Review annually appropriate sections of generator OSDs to ensure consistency with ICD and the changes to generator waste stream descriptions to ensure configuration control.

(e) Establish and maintain the Monitoring Control System (MCS) and the Liquid Effluent Monitoring Information System (LEMIS) for collecting, reporting, and archiving data.

(f) Provide Ecology and others with data information as required by the 216 Permit.

(g) Coordinate with Analytical Services for the analytical requirements of this ICD.

(h) Coordinate with Effluent Monitoring (EM) to schedule generator compliance assessments. Closeout assessment findings.

(i) Review and approve generator recovery plan from upset/breakdown conditions.

(j) Approve all future waste streams into TEDF.

Table 2. Minimum Generator Sampling Requirements[1,2].
(2 sheets)

Waste stream		Sampling method	Parameters[3,4,5]	Frequency
1	PFP waste water	24-hour flow proportional composite except grab for volatile	Indicator	2 weeks
			Expanded	2 months
2	222-S Laboratory Waste water	24-hour flow proportional composite except grab for volatile	Indicator	2 months
			Expanded	6 months
3	T-Plant waste water	24-hour flow proportional composite except grab for volatile	Indicator	2 months
			Expanded	6 months
4	284-W Power Plant waste water	24-hour flow proportional composite except grab for volatile	Indicator	2 months
			Expanded	6 months
5	B-PLANT chemical sewer	24-hour flow proportional composite except grab for volatile	Indicator	2 months
			Expanded	6 months
6	PUREX chemical sewer	24-hour flow proportional composite except grab for volatile	Indicator	2 months
			Expanded	6 months

Table 2. Minimum Generator Sampling Requirements[1,2].
(2 sheets)

Waste stream		Sampling method	Parameters[3,4,5]	Frequency
7	242-A-81 Water Services Building waste water	Grab at batch release	Indicator	2 months
			Expanded	6 months

[1]Sampling is defined as an extraction of a portion of an effluent stream for inspection and/or analytical analysis. The purpose of this sampling is to verify 216 Permit compliance and to note generator process trends.

[2]All waste streams, except 242-A-81 Waste water, have the capacity to sample via either grab or flow proportional sampling. The 242-A-81 Waste water cannot be sampled flow proportionally because of the transient nature of surge type of release. Sampling method, parameters, and frequency will comply with the QAPP (WHC 1995b) and LEF Sampling Schedule (WHC 1995a).

[3]Indicator analyses include the following parameters: pH (onsite), radioactive (i.e., total alpha, total beta, and GEA if needed) (except for 284-W and 242-A-81) and ICP metals. The purpose of the indicator analysis is to determine if the character of the effluent streams has changed.

[4]Expanded analyses include the same parameters required by the 216 Permit at the TEDF end of pipe (See Appendix C). Because the 216 Permit is not issued, for planning purpose the following analytical methods will be used as requirements; pH radioactive constituents, metal, anions, volatile organics, and semi-volatile organics. Expanded sampling is performed to verify and update effluent stream characterization. The constituents of the Groundwater Protection Standards are a subset of the constituents of the expanded analysis.

[5]Expanded analysis will substitute for indicator when the sampling frequency coincide.

2.2 OPERATION SPECIFIC

The LEF operation specific responsibilities include the following.

(a) Monitor for flow at the end of pipe at the disposal site.

(b) Collect samples at the end of pipe at the disposal site for the required parameters pursuant to the 216 Permit, QAPP, and 200 Area LEF sampling schedule. Transport samples to Waste Sampling and Characterization Facility (WSCF) for analysis.

(c) Incorporate the following limits for monitoring, sampling, and upset/breakdown conditions in LEF OSD.

- Maximum flow rate shall be less than 8,706 L/min (2,300 gal/min) as averaged over 2 hours. If exceeded, LEF will contact generators to reduce or to eliminate flow.

- Maximum effluent concentration values from sampling (end of pipe at disposal site) shall be less than 216 Permit limits. Until 216 Permit is issued, the Ground Water Protection Standards (see Appendix D) will be used. If exceeded, LEF will develop a recovery plan that identifies the problem and solution within one week of discovery.

- Maximum downtime of monitoring (end of pipe at disposal site) shall be less than 8 hours. If exceeded, flow rate will be estimated every 8 hours and the other monitoring parameters will be analyzed via flow proportional or 8-hour grab sampling until monitoring is restored.

- Sample collection (end of pipe at disposal site) shall be within one week of 200 Area LEF Sampling Schedule (WHC 1995a). If exceeded, LEF will develop a recovery plan that identifies the problem and solution within one week of discovery.

(d) Respond to OSD violation through LEF occurrence reporting procedures. LEF Plant Manager or designee will notify DOE-RL if appropriate.

(e) Establish and maintain LEF operating, alarm response, and maintenance procedures to support TEDF sampling, monitoring, and upset/breakdown conditions.

(f) Operate and maintain TEDF downstream from TEDF/Generator interface points of Table 3 in accordance with approved procedures.

Table 3. Treated Effluent Disposal Facility/Generator Interface Points[1].

Waste stream		Interface point	Drawing number
1	PFP waste water	New WC-225 Sampling Building	H-2-140366
2	222-S Laboratory waste water	Valve RBW-V-306	H-2-140337/ H-2-140338
3	T-Plant waste water	Manhole A-1	H-2-140334
4	284-W Power Plant waste water	Manhole B-1	H-2-140335
5	B-Plant chemical sewer	Manhole F-1	H-2-140340
6	PUREX chemical sewer	Manhole H-1	H-2-140342
7	242-A-81 Waster Services Building waste water	Intersection of 15 cm (6 in.) DR-P1 line and 30 cm (12 in.) PUREX chemical sewer line	H-2-077832

[1]Interface point is defined to be both the tie-in point and the boundary between generator/Liquid Effluent Facilities (LEF) control. The purpose of this point is to determine operation and maintenance responsibility. LEF is responsible for all systems downstream from this point to the disposal site, while Generators are responsible for the tie-in point and all systems upstream from this point (e.g., Local Control Units).

3.0 GENERATOR RESPONSIBILITIES

This section outlines the generator-specific responsibilities. They include the following activities.

(a) Monitor at the locations specified in the flow diagrams in Appendix B for parameters listed in Table 4.

(b) Collect samples at the locations specified in the flow diagrams in Appendix B for the parameters and frequencies listed in Table 2. Transport the samples to WSCF for analysis. Indicator and expanded parameters are defined as footnotes to Table 2.

(c) Provide funds to WSCF for analytical support after FY 1995.

(d) Establish and maintain the following limits for monitoring, sampling, and upset/breakdown conditions in Generator OSD.

- Maximum flow rate to TEDF shall be less than listed in Table 5 as measured as a 2 hour average. If exceeded, initiate alarm response procedures to reduce or to eliminate flow.

- Maximum downtime of monitors and samplers shall be less than 8 hours. If exceeded, stop discharge, divert effluent, or maintain plant conditions constant. In addition to constant plant conditions, estimate flow rate every 8 hours and analyze the other Table 4 parameters via flow proportional sampling or via 8-hour grab sampling until monitoring is restored. Exceptions to the above will be allowed with concurrence of LEF, EM, and affected generator.

- Sample collection shall be within one week of the 200 Area LEF Sampling Schedule (WHC 1995a). If exceeded, Generators will develop a recovery plan that identifies the problem and solution within one week of discovery.

(e) Respond to OSD violation through facility occurrence reporting procedures and notify LEF by phone immediately and confirm by cc:mail within 8 hours.

(f) Notify LEF if the water quality exceeds the maximum effluent concentrations from sampling listed in Table 5. If exceeded, generator will develop a recovery plan within one week of discovery. If plan is not completed on time or if the plan identifies the generator as causing a 216 Permit violation, the generator will reduce or cease discharge to TEDF until the 216 Permit conditions can be met. Exceptions to the above will be allowed with concurrence of LEF, EM, and affected generator.

Table 4. Minimum Monitoring Requirements[1].

Waste stream		Flow type	Parameters
1	PFP Waste water	Continuous	Flow, pH, conductivity
2	222-S Laboratory waste water	Batch	Flow
3	T-Plant waste water	Continuous	Flow, pH, radioactivity (gamma)
4	284-W Power Plant waste water	Continuous	Flow, pH, Conductivity, Temperature
5	PUREX Chemical Sewer	Continuous	Flow, pH, radioactivity (beta and gamma)
6	B-Plant Chemical Sewer	Continuous	Flow, pH, radioactivity (beta and gamma)
7	242-A-81 Water Services Building waste water	Batch	Flow

[1]Monitoring is defined in this document as measurement of parameters in an effluent stream on a real time continuous basis. The purpose of this monitoring is to detect generator process upsets.

Table 5. Generator and Water Quality Limits.

	Waste stream	Maximum flow gal/min	Maximum water quality values[1]
1	PFP waste water	500	Groundwater Protection Standards
2	222-S Laboratory waste water	50	Groundwater Protection Standards
3	T-Plant waste water	110	Groundwater Protection Standards
4	284-W Power Plant waste water	340	Groundwater Protection Standards
5	PUREX chemical sewer	600	Groundwater Protection Standards
6	B-Plant chemical sewer	200	Groundwater Protection Standards
7	242-A-81 Water Services Building waste water	500	Groundwater Protection Standards

[1]The Groundwater Protection Standards are from *Washington Administrative Code* 173-200 (refer to Appendix D).

(g) Notify LEF by telephone immediately and confirm by cc:MAIL within 8 hours of any failure of piping, impoundments, pumping, or process that will potentially cause an OSD violation.

(h) Establish and maintain generator operating, maintenance, and alarm response procedures (see Figure 2) to support TEDF sampling, monitoring, and upset/breakdown conditions. At a minimum, monitors and samplers need to be calibrated annually.

(i) Operate and maintain generator system upstream of TEDF/Generator interface points in Table 3 in accordance with issued generator procedures.

(j) Notify LEF Work Control via telephone of scheduled downtime (e.g., routine calibration and maintenance) of generator sampling or monitoring equipment (e.g., Local Control Unit). This does not apply to batch released streams. This action does not need to be done if stream has back-up monitors or samplers.

(k) Vary effluent flow (e.g., reduce) within a safe operations if requested by the LEF Facility Manager or designee.

(l) Provide LEF with an updated waste stream description of sources in Appendix B each year in March.

(m) Provide LEF with a revised list of document numbers of Generator OSD and implementing procedures each year in March.

(n) Resolve outstanding findings from assessments completed by Effluent Emissions Monitoring.

4.0 OTHER ORGANIZATIONS RESPONSIBILITIES

The other organizations having responsibilities and requirements are the Effluent Monitoring group and Analytical Services.

The Effluent Monitoring group is responsible for the following.

(a) Perform, at a minimum, yearly environmental assessments of generator compliance with the *Environmental Compliance Manual* and the ICD.

(b) Assist in assessment closeout of findings.

Analytical Services has the responsibility for the following.

(a) Analysis of generator and TEDF samples at WSCF.

5.0 REFERENCES

DOE-RL, 1988a, Order 5400.xy, *Radiation Effluent Monitoring and Environmental Surveillance*, U.S. Department of Energy, Richland, Washington.

DOE-RL, 1988b, Order 5400.1, *General Environmental Protection Program*, U.S. Department of Energy, Richland, Washington.

DOE-RL, 1994, *State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)*, DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

Ecology and DOE-RL, 1991, *Consent Order No. DE 91NM-177*, Washington State Department of Ecology, Olympia Washington and U.S. Department of Energy, Richland, Washington.

Ecology, 1995, *200 Area Treated Effluent Disposal Facility (TEDF) Discharge Permit*, Washington State Department of Ecology, Olympia, Washington.

WAC 173-200, "Water Quality Standards for Ground Waters of the State of Washington," *Washington Administrative Code*, as amended.

WAC 173-216, "State Waste Discharge Permit Program," *Washington Administrative Code*, as amended.

WHC 1992a, *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report*, WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

WHC 1992b, *Functional Design Criteria for the 200 Area Treated Effluent Disposal System Project W-049H*, WHC-SD-W049H-FDC-001, Rev. 1-B, Westinghouse Hanford Company, Richland, Washington.

WHC 1992c, *Project W-049H Interface Control Document*, WHC-SD-W-049H-ICD-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC 1993, *Functional Design Criteria for Project W-291 200 Area Effluent BAT/AKART Implementation*, WHC-SD-W291-FDC-001, Rev. 1-A, Westinghouse Hanford Company, Richland, Washington.

WHC 1994, *Readiness Assessment Plan*, WHC-SD-W049H-RRR-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC 1995a, *200 Area LEF Sampling Schedule*, WHC-SD-ETF-SM-002, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC 1995b, *LEF Quality Assurance Program Plan*, WHC-SD-ETF-QAPP-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-7-5, *Environmental Compliance Manual*, Westinghouse Hanford Company, Richland, Washington.

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APPENDIX A

GENERATOR BAT/AKART TASK LISTS

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APPENDIX A GENERATOR BAT/AKART TASKS

This appendix contains tables that list tasks for BAT/AKART and additional facility improvements required at the generator waste streams by the *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report* (240 ER)[1]. Changes to this basis are noted in the State Waste Discharge Permit Application (216 Permit App)[2]. The table titles are as follows.

Table A-1	Plutonium Finishing Plant Task List for BAT/AKART and Additional Facility Improvements.
Table A-2	222-S Laboratory Task List for BAT/AKART and Additional Facility Improvements.
Table A-3	T Plant Task List for BAT/AKART and Additional Facility Improvements.
Table A-4	284-W Powerplant Task List for BAT/AKART and Additional Facility Improvements.
Table A-5	PUREX Chemical Sewer Task List BAT/AKART and Additional Facility Improvements.
Table A-6	B Plant Chemical Sewer Task List for BAT/AKART and Additional Facility Improvements.
Table A-7	242-A-81 Water Services Building Task List for BAT/AKART and Additional Facility Improvements.

[1]WHC, 1992, *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report*, WHC-SD-W049H-ER-001, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

[2]DOE-RL, 1994, *State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)*, DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

LIST OF TABLES

Table A-1. Plutonium Finishing Plant Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Install closed-loop cooling at 234-5Z/236-Z Buildings[1]	240 ER Rev 0 (B-44)
Install closed loop cooling at 291-Z	240 ER Rev 0 (B-44)
Replacement of vacuum sampling pumps	240 ER Rev 0 (B-44)
Removal of sources identified in Table B.5.1 of 240 ER[1]	240 ER Rev 0 (B-45)
Install equalization tanks to hold waste water for end-of-pipe treatment	240 ER Rev 0 (B-iii)
Install microfiltration to remove suspended solids	240 ER Rev 0 (B-43)
Install carbon absorption to remove organics	240 ER Rev 0 (B-41)
Install bone-char to remove radionuclides	240 ER Rev 0 (B-42)
Install ion exchange to remove inorganics	240 ER Rev 0 (B-42)
Construct piping connecting to TEDF	240 ER Rev 0 (B-93)
Install piping to connect effluent sources to sanitary sewer	240 ER Rev 0 (B-93)
Install new drainage system and piping for roof and storm water drainage	240 ER Rev 0 (B-93)
Clean, assess and/or replace existing drainage piping to remove residual constituents deposits that may have accumulated from past practices.	240 ER Rev 0 (B-93)
Install monitoring and sampling equipment.	240 ER Rev 0 (4-3) 216 Permit App (C-7)
Eliminate Z-21 Basin by redirecting flow to TEDF	216 Permit App (C-7)
Install resistant heating in 231-Z so that sources will be eliminated	216 Permit App (C-7)

NOTES:

[1] The closed-loop cooling system for 234-5Z was installed but the process equipment was never hooked up to the heat exchangers because the process is shut down. The connections are available so process equipment could be added a need for CLC arises. The 236-Z Building contains two processes, one for plutonium nitrate purification (PRF) and one for slag and crucible recovery (S&C). The S&C process was shutdown in 1991 and is no longer needed. S&C process vessels were not connected to the CLC system and will not be operated. The following sources from Table B.5-1 (240 ER) need to have the planned source control changed from closed-loop cooling to treat/discharge to Project W-049H.

68 234-5Z Rm 235 RMA line hoods CW drains
76 236-Z TK-10 jacket J-11 CW discharge
78 236-Z TK-12 jacket J-13 CW discharge
120 236-Z Rm 41 glovebox H-4 still cond CW drain
121 236-Z Rm 41 glovebox H-4 furnace cond CW drain
138 234-5Z Rm 169 HA-40F glovebox furnaces/cond CW
139 234-5Z Rm 170 HC-46F condensers (3) CW
141 234-5Z Rm 179 thermal analyzer CW
143 234-5Z Rm 262 HVAC cooling water drains

TEDF = Treated Effluent Disposal Facility

References:

DOE-RL, 1994, "State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)," DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-2. 222-S Laboratory Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Add corrosion inhibitors to steam supply to reduce metal concentration	240 ER Rev 0 (C-40)
Change-out piping and equipment to reduce potential for contamination	240 ER Rev 0 (C-41)
Reroute of sources downstream of 207-SL Retention Basin	240 ER Rev 0 (C-41)
Install additional basin capacity for the retention of waste water	240 ER Rev 0 (C-41)
Eliminate use of cell heaters to avoid condensate generation	240 ER Rev 0 (C-42)
Replace HVAC air washers with electric chillers to eliminate blowdown	240 ER Rev 0 (C-42)
Investigate alternative demineralizer columns to reduce constituent concentrations associated with initial backwash.	240 ER Rev 0 (C-42)
Construct piping connecting to Treated Effluent Disposal Facility (TEDF)	240 ER Rev 0 (C-78)
Install monitoring and sampling equipment	216 Permit App (C-13)

References:

DOE-RL, 1994, "State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)," DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-3. T-Plant Waste Water Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Replace/remove stored chemicals from head-end	240 ER Rev 0 (G-28)
Decontaminate rooms containing sumps and drains.	240 ER Rev 0 (G-28)
Route head-end waste water	240 ER Rev 0-B (G-28)
Plug floor drains at 221-T.	240 ER Rev 0 (F-8)
Replace air compressor with air cooled unit	240 ER Rev 0 (F-29)
Replace the water-cooled pressurized water reactor chiller with an air cooled refrigerant cooling system (Eliminate PWR cooling water)	240 ER Rev 0-B (F-30)
Install collection tanks at the head end existing catch tank	240 ER Rev 0-B (F-30)
Reconfigure the internal/external piping to Treated Effluent Disposal Facility (TEDF)	240 ER Rev 0 (F-30)
Construct piping connecting to TEDF	240 ER Rev 0 (F-65)
Inspect chemical sewer piping for integrity and residual contamination to repair, reline, and/or replace as needed	240 ER Rev 0 (F-63)
Install monitoring and sampling	240 ER Rev 0 (4-3 & 4-4)
Remove chemical neutralization system	216 Permit App (C-9)

References:

DOE-RL, 1994, "State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)," DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-4. 284-W Power Plant Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Install flow, head loss, and turbidity meters to optimize filter backwash frequency at 283-W Water Treatment Facility.	240 ER Rev 0 (J-27)
Install flocculation/sedimentation units at 283-W.	240 ER Rev 0 (J-34)
Install automatic level controller on 282-W and route emergency overflow from 282-W reservoir to Treated Effluent Disposal Facility (TEDF).	240 ER Rev 0-C (J-34 and J-42)
Replace 277-W air compressor with air-cooled unit.	240 ER Rev 0 (J-34)
Install limited flow (95 L/min [25 gal/min]) pump in 277-W for pump and hydro testing.	240 ER Rev 0 (J-34)
Install closed loop refrigeration cooling unit on 277-W welding machines	240 ER Rev 0 (J-34)
Install monitoring and sampling	240 ER Rev 0 (4-3)
Delete 284-W Powerhouse sources and add oil-fired package boiler plant sources.	216 Permit App (C-13)
Connect new 283-W sources (sample drain, sample sink, floor drain) to TEDF	216 Permit App (C-13)
Consider converting 282-W Reservoir from raw to sanitary with a new reservoir that will go to TEDF	240 ER Rev 0-C (J-63)

References:

DOE-RL, 1994, "State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)," DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-5. Purex Chemical Sewer Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Blank off the sump at the tank car unloading station.	240 ER Rev 0-C (K-56)
Reactivate as needed the E-F11 concentrator to reprocess waste generated by deactivation activities.	240 ER Rev 0-C (K-56) 216 Permit App (C-16)
Replace chemical sewer piping	240 ER Rev 0-A (K-95)
Construct piping connecting to Treated Effluent Disposal Facility (TEDF)	240 ER Rev 0 (K-95)
Monitoring and sampling	240 ER Rev 0 (4-3, 4-4, and K-56)
Eliminate 2901-A Sanitary Water Tower overflow	240 ER Rev 0-C (K-92)

References:

DOE-RL, 1994, "State Waste Discharge Permit Application - 200 Area Treated Effluent Disposal Facility (Project W-049H)," DOE/RL-94-29, U.S. Department of Energy, Richland, Washington.

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-6. B-Plant Chemical Sewer Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Reroute/replace piping downstream of 211-BA Neutralization Facility.	240 ER Rev 0 (N-32)
Replace deteriorated floor spill containment around AMU tanks	240 ER Rev 0 (N-32)
Provide neutralization for acidic and alkaline liquids	240 ER Rev 0 (N-33)
Provide secondary containment for tanks in the 211-B Area	240 ER Rev 0 (N-33)
Cap selected drains to the B-Plant chemical sewer	240 ER Rev 0 (N-33 and N-41)
Replace demineralizer with continuous electrodionizer	240 ER Rev 0 (N-33)
Connect of 221-B and 271-B to 6" chem sewer header and monitor for possible diversion.	240 ER Rev 0 (N-iii, N-34)
Connect potentially contaminated sources from WESF to low-level waste handling system for storage in double-shell tanks.	240 ER Rev 0 (N-34)
Construct piping connecting to Treated Effluent Disposal Facility (TEDF).	240 ER Rev 0 (N-69)
Install monitoring and sampling equipment	240 ER Rev 0 (4-3 & 4-4)
Eliminate 2902-B Sanitary Water Tower overflow.	240 ER Rev 0-C (N-67)

Reference:

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

Table A-7. 242-A-81 Water Services Building Task List for BAT/AKART and Additional Facility Improvements.

Activity	Reference (page)
Install monitoring and sampling.	240 ER Rev 0 (4-3)

Reference:

WHC 1992, "200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report," WHC-SD-W049H-ER-003, Rev. 0-C, Westinghouse Hanford Company, Richland, Washington.

APPENDIX B

GENERATOR WASTE STREAM DESCRIPTIONS

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APPENDIX B
GENERATOR WASTE STREAM DESCRIPTIONS

This appendix describes the waste streams sources for each generator stream. The section titles are as follows.

B.1 Plutonium Finishing Plant Waste Water Description

B.2 222-S Laboratory Waste Water Description

B.3 T Plant Waste Water Description

B.4 284-W Powerhouse Waste Water Description

B.5 PUREX Chemical Sewer Description

B.6 B Plant Chemical Sewer Description

B.7 242-A-81 Water Services Building Description

LIST OF FIGURES

LIST OF TABLES

B.1 PLUTONIUM FINISHING PLANT

The Plutonium Finishing Plant (PFP) waste water stream consists of potentially contaminated waste water originally discharged to the 216 Crib and uncontaminated heating, ventilation, and air conditioning (HVAC) waste water originally discharged to the 216-Z-21 Seepage Basin. The potentially contaminated waste water includes non-contact process cooling water from the Plutonium Reclamation Facility (PRF), miscellaneous waste water from laboratory activities, steam condensate, and air conditioning condensate. Waste water sources with a high potential for contamination have been either replaced with a closed-loop cooling system or eliminated. Remaining waste water sources that may contain contamination are sent to the 243-Z Low-Level Waste Treatment Facility (LLWTF). The treated waste water is then discharged to the 200 Area Treated Effluent Disposal Facility (TEDF).

Waste waters that are known to be contaminated or contain mixed wastes are collected in the 241-Z Tanks and sent to the tank farms.

The PFP HVAC system is operated continuously to provide contamination control by isolating areas of both known and potential contamination in the plant. Other uncontaminated discharges include stream condensates, overflow from the hightank, and storm water runoff.

For a stream schematic and a source description of PFP sources, refer to Figure B-1 and Table B-1, respectively.

Figure B-1. Plutonium Finishing Plant Waste Water Flow Schematic (Revised 06/30/95).

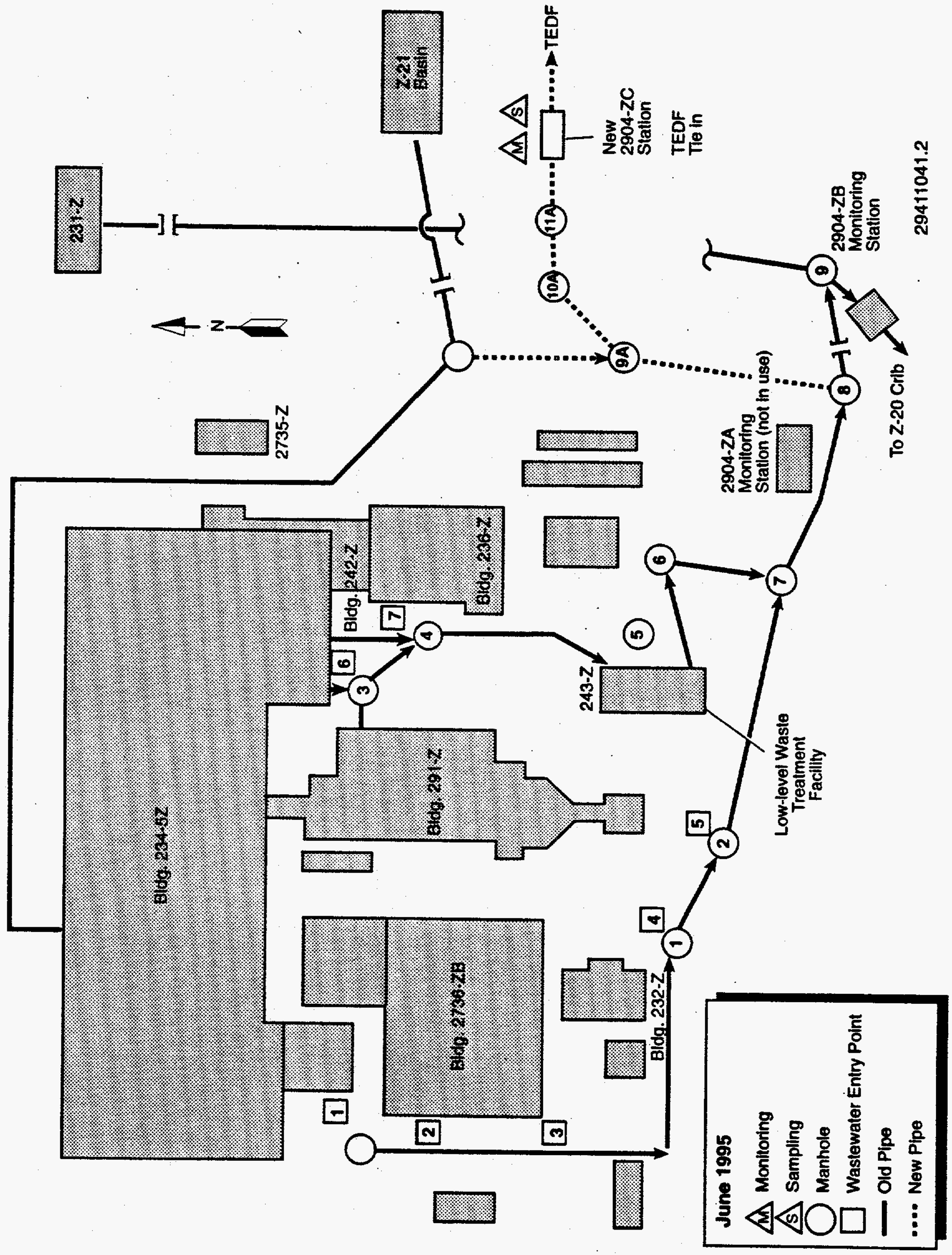

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
1.	BFP Backflow Preventer Drain	236-Z	Sanitary	I	1.2E-04	Active	
2.	Roof Drain West End	234-5Z	Rain	I	6.4E-01	Active	
3.	Evaporative A/C No. S-15 Drain	291-Z	Sanitary	C	3.0E+00	Active	
~~4.~~	~~Floor Drains~~	~~232-Z~~	~~Sanitary~~	~~I~~	~~0.0E+00~~	~~Active~~	[6a]
~~5.~~	~~Scrubber Drain~~	~~232-Z~~	~~Sanitary~~	~~I/C~~	~~0.0E+00~~	~~Active~~	[6c]
6.	Yard Storm Drains Stack Area (3)	291-Z	Rain	I	6.3E-01	Active	
7.	Room 45 HVAC Condensate Drain	236-Z	Condensate	I	1.2E-04	Active	
~~8.~~	~~Roof Drain East End~~	~~234-5Z~~	~~Rain~~	~~I~~	~~6.4E-01~~	~~Active~~	[6c]
~~9.~~	~~Duct Level Safety Shower Drains Rm 262, 263, 264~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~1.5E-03~~	~~Active~~	[6c]
10.	Protected Process Water Backflow Prev. Drain	234-5Z	Sanitary	I	3.6E-04	Active	
11.	Hydraulic Unit CW Drain Room 145	234-5Z	Sanitary	C	0.0E+00	Active	
~~12.~~	~~Rm 308 East Side Floor Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~6.9E-03~~	~~Active~~	[6a]
~~13.~~	~~Drinking Fountain Corridor 10 Dev. Lab~~	~~234-5Z~~	Sanitary	I	9.5E-05	Active	[6c]
~~14.~~	~~Drinking Fount. Corr 4C Analytical Lab~~	~~234-5Z~~	Sanitary	I	6.9E-03	Active	[6c]
~~15.~~	~~Rm 47 Supply Fan Condensate Drain~~	~~231-Z~~	~~Sanitary~~	~~I~~	~~6.9E-03~~	~~Active~~	[6a]
16.	Corridor 4D Eyewash	234-5Z	Sanitary	I	1.2E-4	Active	
17.	Rm 150 Air Cond. Ret. Water and Cond.	234-5Z	Condensate	C	n/a	Inactive	
18.	Rm 192 Refr. Unit H1-73E Drain Riser	234-5Z	Sanitary	C	n/a	Inactive	
~~19.~~	~~Rm 192 Drinking Fountain Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Inactive~~	[6a]
20.	Rm 192D Air Cond. Drain Riser (Pipe Tnl)	234-5Z	Sanitary	I/C	n/a	Inactive	
~~21.~~	~~Rm 199 Maintenance Shop Sink Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~3.5E-02~~	~~Active~~	[6a]
~~22.~~	~~Rm 199 Maintenance Shop Floor Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~2.3E-04~~	~~Active~~	[6a]
23.	Rm 202 Ceramic Shop Drain Risers (Two)	234-5Z	Sanitary	I/C	n/a	Inactive	
24.	Rm 202 Ceramic Shop Floor Drains	234-5Z	Sanitary	I	n/a	Inactive	
~~25.~~	~~Rm 229 TOCCO Unit CW Drain~~	~~234-5Z~~	~~Sanitary~~	~~C~~	~~1.5E+00~~	~~Active~~	[6a]
~~26.~~	~~Rm 229 Drinking Fountain Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~6.9E-03~~	~~Active~~	[6a]
~~27.~~	~~Rm 235 Corridor 13 Drinking F. Drain~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~3.8E-05~~	~~Active~~	[6a]

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
28.	Rm 235 Drinking Fountain Drain Riser	234-5Z	Sanitary	I	n/a	Inactive	
29.	Rm 236 HC-41 Chuck CW Drain Riser	234-5Z	Sanitary	C	n/a	Inactive	
30.	W-3 Jacket Cooling Water Drain Riser	242-Z	Sanitary	C	n/a	Inactive	
31.	W-4 Jacket Cooling Water Drain Riser	242-Z	Sanitary	C	n/a	Inactive	
32.	Tank A-1 Overflow Floor Drain	242-Z	Sanitary	I	n/a	Inactive	
33.	Tank A-2 Overflow Floor Drain	242-Z	Sanitary	I	n/a	Inactive	
34.	Tank A-3 Overflow Floor Drain	242-Z	Sanitary	I	n/a	Inactive	
35.	Tank A-4 Overflow Floor Drain	242-Z	Sanitary	I	n/a	Inactive	
36.	Safety Shower Floor Drain	242-Z	Sanitary	I	n/a	Inactive	
~~37.~~	~~Wound Flushing Station Drain~~	~~242-Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Inactive~~	[6c]
38.	Breathing Air Comp 1 After cooler Drain	291-Z	Sanitary	C	n/a	Inactive	
39.	Breathing Air Comp 2 After cooler Drain	291-Z	Sanitary	C	n/a	Inactive	
~~40.~~	~~17 Hg Air Sampling Pump 1 Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~2.0E+01~~	~~Active~~	[6a]
~~41.~~	~~17 Hg Air Sampling Pump 2 Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~n/a~~	~~Active~~	[6a]
~~42.~~	~~90 psig Air Comp 1 Aftercooler Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~1.0E+01~~	~~Active~~	[6a]
~~43.~~	~~90 psig Air Comp 2 Aftercooler Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~n/a~~	~~Active~~	[6a]
44.	40 psig Air Comp 1 Aftercooler Drain	291-Z	Sanitary	C	n/a	Inactive	
45.	40 psig Air Comp 2 Aftercooler Drain	291-Z	Sanitary	C	n/a	Inactive	
~~46.~~	~~Instr Air Comp 1 Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~1.7E+01~~	~~Active~~	[6a]
~~47.~~	~~Instr Air Comp 2 Drain~~	~~291-Z~~	~~Sanitary~~	~~C~~	~~n/a~~	~~Active~~	[6a]
48.	26 Hg vacuum pump No. 1 Drain	236-Z	Sanitary	C	n/a	Inactive	
49.	26 Hg vacuum pump No. 2 Drain	236-Z	Sanitary	C	n/a	Inactive	
~~50.~~	~~HVAC Drains (8)~~	~~232-Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Active~~	[6a]
51.	Room 132 90 psig Air Line Cond. Trap Drain	234-5Z	Sanitary	I	1.2E-04	Active	
52.	Transformer Room Floor Drain	291-Z	Sanitary	I	2.3E-04	Active	

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
53.	Rm 141 Open Face Hood Drain	234-5Z	Sanitary	C	n/a	Inactive	[6c]
54.	Rm 141 Sink Drain	234-5Z	Sanitary	I	2.4E-03	Active	
55.	Rm 152 Glovebox Cond. CW Drain	234-5Z	Sanitary	C	n/a	Inactive	
56.	Rm 228B HC-15A, B, C Ind. Coil CW Drains	234-5Z	Sanitary	C	0.0E+00	Active	
57.	Rm 179B Drains Development Lab	234-5Z	Sanitary	I	n/a	Inactive	
58.	Rm 182A Drain Development lab	234-5Z	Sanitary	I	n/a	Inactive	
59.	Rm 183A Sink Drain Development Lab	234-5Z	Sanitary	I	n/a	Inactive	
60.	Rm 184 Floor Drain Development Lab	234-5Z	Sanitary	I	n/a	Inactive	
61.	Rm 186 & 187 Glovebox CW Drain D.L.	234-5Z	Sanitary	C	n/a	Inactive	
62.	Rm 189 Floor Drain Development Lab	234-5Z	Sanitary	I	n/a	Inactive	
63.	Rm 191 Floor Drain Development Lab	234-5Z	Sanitary	I	n/a	Inactive	
64.	Rm 202 Ceramic Shop Sink Drain	234-5Z	Sanitary	I	6.9E-03	Active	
65.	Rm 227 Floor Drain	234-5Z	Sanitary	I	n/a	Inactive	
66.	Rm 228 Comp Air Cond. Drip Trap Drain	234-5Z	Air Moisture	I	n/a	Inactive	[6b]
67.	Rm 230 CW from Hood Drains	234-5Z	Sanitary	I	n/a	Inactive	
68.	Rm 235 RMA Line Hoods CW Drains	234-5Z	Sanitary	I/C	0.0E+00	Active	
69.	Rm 236 Floor Drains	234-5Z	Sanitary	I	n/a	Inactive	
70.	Column D-16 Drain	234-5Z	Sanitary	I	n/a	Inactive	
71.	Column D-18 Sink Drain	234-5Z	Sanitary	I	n/a	Inactive	
72.	Rm 16 Maintenance Shop Sink Drain	236-Z	Sanitary	I	n/a	Inactive	[6c]
73.	Rm 16 Drinking Fountain Drain	236-Z	Sanitary	I	6.9E-03	Active	[6c]
74.	Corridor 10 Wound Flushing Station Drain	236-Z	Sanitary	I	n/a	Inactive	[6c]
75.	Corr 11 Fire Water Drn to Exh Duct Sump (5)	236-Z	Sanitary	I	3.0E-03	Active	
76.	TK-10 Jacket J-11 CW discharge	236-Z	Sanitary	I/C	0.0E+00	Active	

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
77.	Corr 14 Fire Water Drn to Exh Duct Sump (5)	236-Z	Sanitary	I	3.0E-03	Active	
78.	TK-12 Jacket J-13 CW discharge	236-Z	Sanitary	I/C	0.0E+00	Active	
~~79.~~	~~TK-36 Jacket CW Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~2.0E+00~~	~~Active~~	[6a]
~~80.~~	~~TK-37 Jacket CW Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~5.0E-01~~	~~Active~~	[6a]
~~81.~~	~~TK-38 Jacket CW Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~5.0E-01~~	~~Active~~	[6a]
~~82.~~	~~TK-120 Jacket CW Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~5.0E-01~~	~~Active~~	[6a]
83.	TK-WM-1 Jacket CW Drain	236-Z	Sanitary	C	n/a	Inactive	
~~84.~~	~~Tank 22 Cooling Water Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~1.5E+01~~	~~Active~~	[6a]
85.	Slag/Crucible Tank 125 Flush Cond. Drain	236-Z	Sanitary	I/C	0.0E+00	Active	
~~86.~~	~~Slag & Crucible Tank 9 Flush Cond. Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~2.0E+00~~	~~Active~~	[6c]
~~87.~~	~~Tank 44 Cooling Water Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~7.0E+00~~	~~Active~~	[6a]
~~88.~~	~~Corridor 20 Wound Flushing Sta Drain~~	~~236-Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Inactive~~	[6c]
89.	EC and ED Heaters Condensate Drain	236-Z	Condensate	C	0.0E+00	Active	
90.	100 psig Steam Condensate Drain	236-Z	Sanitary	C	5.0E-03	Active	
91.	Tk 57 Overflow Drain	236-Z	Sanitary	C	0.0E+00	Active	
~~92.~~	~~Corridor 30 wound Flushing Station Drain~~	~~236-Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Inactive~~	[6c]
93.	Corridor 33 Prot. Proc. Water Drn Hydropnm	236-Z	Sanitary	I	n/a	Inactive	
~~95.~~	~~Equip Rm 35 17 Hg Sample Pump 2 Seal~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~n/a~~	~~Active~~	[6a]
96.	Rm 35 Instr Air Comp Aftercooler Drain	236-Z	Sanitary	C	n/a	Inactive	
97.	Rm 35 Instr Air Comp Cond Trap Drain	236-Z	Air Moisture	I	n/a	Inactive	
98.	Rm 35 90 psig Air Filter Drains (2)	236-Z	Air Moisture	I	6.0E-01	Active	
99.	Rm 35 Proc Wtr Sply Backflow Prev Drain	236-Z	Sanitary	I	1.2E-04	Active	
100.	Rm 35 Steam Condensate Headers Drain	236-Z	Condensate	C	n/a	Inactive	
101.	Rm 35 Floor Drain	236-Z	Sanitary	I	6.9E-03	Active	
102.	BFP-1 Backflow Preventer Drain	236-Z	Sanitary	I	1.2E-04	Active	
103.	BFP-2 Backflow Preventer Drain	236-Z	Sanitary	I	1.2E-04	Active	

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
104.	BFP-3 Backflow Preventer Drain	236-Z	Sanitary	I	1.2E-04	Active	
105.	BFP-4 Backflow Preventer Drain	236-Z	Sanitary	I	1.2E-04	Active	
106.	Ventilation Reheat Coil 1 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
107.	Ventilation Reheat Coil 2 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
108.	Ventilation Reheat Coil 3 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
109.	Ventilation Reheat Coil 4 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
110.	Ventilation Reheat Coil 5 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
111.	Ventilation Reheat Coil 6 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
112.	Ventilation Reheat Coil 7 Steam Cond Dr	236-Z	Condensate	C	1.0E-01	Active	
113.	Chem Prep Rm Steam Sply Trap Drn	236-Z	Condensate	C	1.0E-01	Active	
114.	Tk 43 Concentrator Proc Steam Sply Trap Drain	236-Z	Condensate	I/C	0.0E+00	Active	
115.	Rm 40 Chem Prep Eye Wash Drain	236-Z	Sanitary	I	n/a	Inactive	
116.	Rm 40 Chem Prep Sink Drain	236-Z	Sanitary	I	n/a	Inactive	
117.	Rm 41 Glovebox H-3 Tk73 Steam Cond. Drain	236-Z	Sanitary	C	0.0E+00	Active	[6a]
118.	Rm 41 Glovebox H-3 Elec. Disolver CW Drain	236-Z	Sanitary	C	0.0E+00	Active	[6a]
~~119.~~	~~Rm 41 Glovebox Floor Drain~~	~~236-Z~~	~~Sanitary~~	~~I~~	~~0.0E+00~~	~~Active~~	[6b]
120.	Rm 41 Glovebox H-4 Still Cond CW Drain	236-Z	Sanitary	I/C	0.0E+00	Active	
121.	Rm 41 Glovebox H-4 Furnace Cond CW Drain	236-Z	Sanitary	I/C	0.0E+00	Active	
~~122.~~	~~Rm 41 Glovebox H-5 Dissolver CW Drains (5)~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~2.5E+00~~	~~Active~~	[6a]
~~123.~~	~~Rm 41 Glovebox H-6 Tank C4 CW Drain~~	~~236-Z~~	~~Sanitary~~	~~C~~	~~5.0E-01~~	~~Active~~	[6a]
~~124.~~	~~Rm 44 Drinking Fountain Drain~~	~~236-Z~~	~~Sanitary~~	~~I~~	~~6.9E-03~~	~~Active~~	[6c]
125.	Rm 45 Office Drinking Fountain Drain	236-Z	Sanitary	I	n/a	Inactive	
126.	Corridor 47 Wound Flushing Station Drain	236-Z	Sanitary	I	n/a	Inactive	

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
127.	Corridor 47 Eye Wash Drain	236-Z	Sanitary	I	n/a	Inactive	
128.	BFP-5 Backflow Preventer Drain	236-Z	Sanitary	I	n/a	Inactive	
129.	3rd Floor AMU Drain	234-5Z	Sanitary	I	n/a	Inactive	
130.	Rm 40 Chem Prep Floor Drains	236-Z	Sanitary	I	n/a	Inactive	
131.	Rm 40 Overflow Drains (2) from 9 Tanks	236-Z	Sanitary	I	n/a	Inactive	
~~132.~~	~~HVAC Drains~~	~~231-Z~~	~~Condensate~~	~~C~~	~~7.0E+00~~	~~Active~~	[6c]
~~133.~~	~~Sink/Floor Drains~~	~~231-Z~~	~~Sanitary~~	~~I~~	~~4.2E-02~~	~~Active~~	[6c]
~~134.~~	~~Storm/Roof Drains~~	~~231-Z~~	~~Rain~~	~~I~~	~~2.8E-01~~	~~Active~~	[6b]
~~135.~~	~~Bulk Chemical Storage Sump~~	~~2735-Z~~	~~Sanitary~~	~~I~~	~~n/a~~	~~Inactive~~	[6b]
136.	TK 21 Filtrate Evap. Steam Sply Trap Drain	236-Z	Sanitary	C	0.0E+00	Active	
~~137.~~	~~Corridor 3 Floor Drains~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~2.3E-04~~	~~Active~~	[6a]
138.	Rm 169 HA-40F Glovebox Furnaces/Cond. CW	234-5Z	Sanitary	C	0.0E+00	Active	
139.	Rm 170 HC-46F Condensers (4) CW	234-5Z	Sanitary	C	0.0E+00	Active	
~~140.~~	~~Rm 232 HA-46 Canyon CW Drain~~	~~234-5Z~~	~~Sanitary~~	~~C~~	~~0.0E+00~~	~~Inactive~~	[6a]
141.	Room 179 Thermal Analyzer CW	234-5Z	Sanitary	I	0.0E+00	Active	
142.	Room 262 HVAC Condensate Drains - 4 Units	234-5Z	Condensate	C	0.8E+00	Active	
143.	Room 262 HVAC Cooling Water Drains	234-5Z	Sanitary	C	4.0E+00	Active	
144.	Room 264 RMA Generator Motor CW Drain	234-5Z	Sanitary	C	1.2E-03	Active	
145.	Room 235A-2 Hydraulic Pump Cooling Water Drn	234-5Z	Sanitary	C	n/a	Inactive	
146.	Room 202 Eyewash on Mezzanine Level	234-5Z	Sanitary	I	1.2E-04	Active	
147.	Room 340 Computer Room HVAC Cond Drain	234-5Z	Condensate	I	0.2E+00	Active	
148.	Room 340 Floor Drains (2)	234-5Z	Sanitary	I	1.4E-02	Active	
149.	Evaporative A/C No. S-13 Drain	291-Z	Sanitary	C	2.0E+00	Active	
150.	Evaporative A/C No. S-14 Drain	291-Z	Sanitary	C	2.0E+00	Active	
151.	Room 262 Cold Water Overflow	234-5Z	Sanitary	C	2.0E-01	Active	
152.	Room 262 Hydraulic Unit	234-5Z	Sanitary	I	0.0E+00	Active	
153.	Room 265 TOCCO Unit	234-5Z	Sanitary	I	0.0E+00	Active	

Table B-1. Plutonium Finishing Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a]. (7 sheets)

	Source	Building	Effluent Water Type [2]	Flow Type [3]	Flow Rate gal/min [4]	Status [5]	Reason for Changes [6]
~~154.~~	~~Room 321 Air Chillers (2)~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~2.4E-04~~	~~Inactive~~	[6a]
155.	Room 321 Air Dryers (4)	234-5Z	Sanitary	I	2.4E-04	~~Inactive~~	[6a]
156.	Process Steam Supply Condensate (2)	236-Z	Sanitary	C	1.0E-03	Active	
157.	Old 100 psig Steam Condensate Drains (2)	236-Z	Sanitary	I	0.0E+00	Active	
158.	TK-WS-1 PPCW Blowdown	236-Z	Sanitary	I	0.0E+00	Active	
159.	Room 501 Floor drains	291-Z	Sanitary	I	2.4E-03	Active	
~~160.~~	~~Rm 308 Floor Drains (West End)~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~2.8E-02~~	~~Active~~	[6a]
161.	Rm 263 RMC Control Rm HVAC CW	234-5Z	Sanitary	C	0.4E+00	Active	
162.	Rm 262 Analytical Lab TOCCO Unit CW	234-5Z	Sanitary	C	0.0E+00	Active	
~~163.~~	~~Rm 337 Chem Prep Floor Drains~~	~~234-5Z~~	~~Sanitary~~	~~I~~	~~1.2E-04~~	~~Active~~	[6a]
164.	Rm 262 Developmental Lab. TOCCO Unit CW	234-5Z	Sanitary	C	0.0E+00	Active	
~~165.~~	~~17 in Hg vacuum pumps~~	~~231-Z~~	~~Sanitary~~	~~C~~	~~1.5E+00~~	~~Active~~	[6c]
166.	Dry air cooling water	234-5Z	Sanitary	I/C	0.0E+00	Inactive	[6d]
167.	HVAC steam condensate	234-5Z	Condensate	C	2.9E+01	Active	[6d]
168.	Ventilation spray pan	234-5Z	Raw/Sanitary	C	1.2E+01	Active	[6d]
169.	North storm drain (4)	234-5Z	Rain	I	4.0E-01	Active	[6d]
170.	High tank overflow	234-5Z	Sanitary	C	5.0E+00	Active	[6d]
171.	Room 221-A air conditioning	234-5Z	Sanitary	C	4.8E-03	Active	[6d]
172.	Two single cooling towers	236-Z	Sanitary	C	1.0E+00	Active	[6f]
173.	HVAC steam condensate	2736-ZB	Condensate	C	1.0E+00	Active	[9]
174.	26-in. vacuum cooling tower	234-5Z	Sanitary	I/C	0.1E+00	Active	[9]
		Total			6.3E+01 [7]		
		Maximum			5.0E+02 [8]		

NOTES:

[1] strikeout items indicate an eliminated contributor streams at 6/95
[1a] This table updates Table B.5-1 and the sources in Figure B.5-1 in the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw Water = Untreated Columbia River water
Sanitary = Potable water (suitable for drinking)
Condensate = Steam condensate
[3] I = intermittent, C = Continuous, I/C = Continuous when operating
[4] Based on total annual flow divided 525,600 minutes (one year)
[5] Active = Source that is presently discharging, Inactive = Source Presently not discharging
[6] Reason for change
(a) Source eliminated per BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
(b) Stream never connected to crib
(c) Source eliminated but not part of BAT/AKART (WHC-SD-W049H-ER-003, Rev. 0-C)
(d) Source added since the 234-5Z streams will no longer go to 216-Z-21 Basin
(e) Source added never identified
(f) Newly identified stream as a result of implementing BAT/AKART as of 11/30/94
[7] Total flow to TEDF includes sources that were discharging to the Z-21 Basin (Project C-116)
[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001, Rev. 1-B)
[9] Source identified after 216 Permit Application on 11/30/94.

B.2 222-S LABORATORY

B.2.1 222-S LABORATORY WASTE STREAM DESCRIPTION

B.2.1.1 First Floor Analytical Section

All analytical section laboratory sinks and hood drains (except in Rooms 2B and 2B-2) go to the retention basin waste line. The laboratory sink and hood drain in Room 2B-2 and all drains in Room 2B go to the 219-S Waste Handling Facility. All analytical section water fountains and service sinks in Rooms 7B, 7C, and 7D go to the analytical section retention basin waste line.

B.2.1.2 Second Floor Equipment Room

The sink and glass saw drains in the glass blowing shop go to the analytical section retention basin waste water line. The distilled water overflow and drain lines, the second-floor steam condensate, the fire suppression sprinkler system drain, the hot-water generator tank No. 20 overflow and drain, the backflush and drain from the deionized-water unit, and a floor drain near the deionized-water unit, all go to the analytical section coolant and condensate line. Lines discharging into the flash tank include condensate from booster coils BC 1 through 6 and condensate from the reheat and preheat coils on supply fans 1 through 4. A floor drain in Room S1A drains to the multicurie section retention basin waste line.

B.2.1.3 Sumps

All sumps act as floor drains for tunnels under the 222-S Laboratory. These tunnels contain drain lines for the building. Nonradioactive and nonhazardous effluents from sumps 1 through 6 discharge into the analytical section retention basin waste line. In turn, Sump No. 5 fed by a drain line from a floor drain in a stairwell outside the 222-S Laboratory near door No. 9 on the north side of the building.

A floor drain outside door No. 18 goes to sump 7, which in turn discharges to the multicurie section retention basin waste line. Steam condensate from the 222-S Building main steam line flows into the multicurie section condensate line. The two lines then exit the north side of the building to manhole No. 6. At manhole No. 6, the lines connect into the line going to the 207-SL Retention Basin.

B.2.2 222-SA STANDARDS LABORATORY

Nonhazardous effluents from the laboratory sinks, fume hoods, and glass washer are discharged to a polyvinyl chloride pipe drain. This line then discharges directly into the line going to the 207-SL Retention Basin.

B.2.3 219-S WASTE HANDLING FACILITY

A sump located in the operating gallery, and steam condensate from the operating gallery all empty into a utility drain. The line runs west out of the 219-S Building to manhole No. 4 where it connects to a line, running to the 207-SL Retention Basin.

Currently, the crib receives approximately 26,500 L/day (7,000 gal/day) in the summer and about 56,780 L/day (15,000 gal/day) during the winter months. For a stream schematic and a source description of 222-S Laboratory sources, refer to Figure B-2 and Table B-2, respectively.

Figure B-2. 222-S Laboratory Waste Water Flow Schematic (Revised 06/30/95).

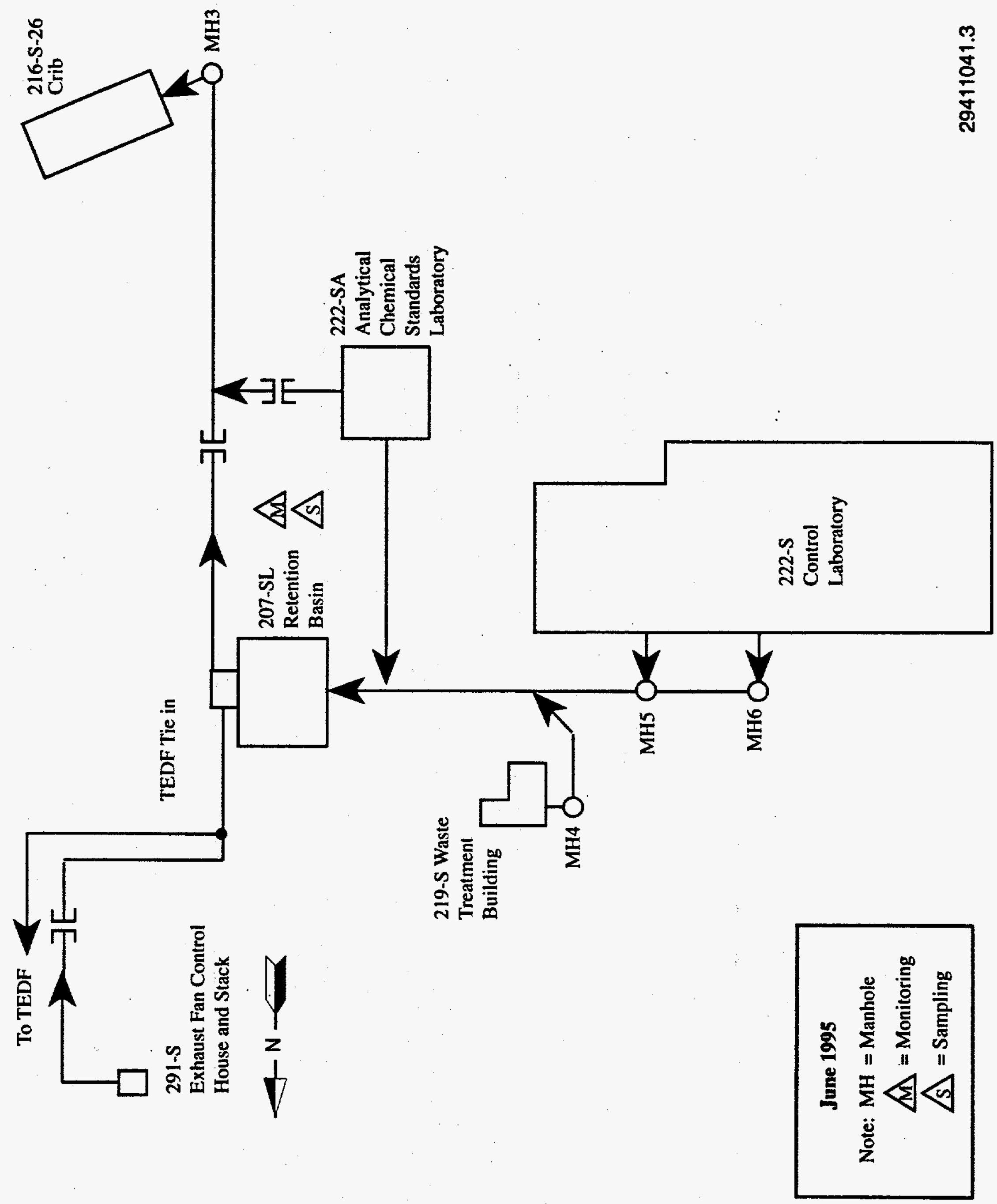

Table B-2. 222-S Laboratory Waste Water Sources to TEDF (Revised 06/30/95) [1,1a].

	Source	Bldg	Effluent Water Type [2]	Flow [3]	Flow Rate (gal/min) [4]	Status [5]	Changes [6]
1.	Booster coil (BC1 to BC6) Condensate	222-S	Condensate	I/C	1.4E+00	Active	
2.	Preheat and reheat Coil Condensate	222-S	Condensate	I/C	2.7E+00	Active	
~~3.~~	~~Supply Air Washer Blowdown~~	~~222-S~~	~~5X Raw Water~~	~~I/C~~	~~1.4E+02~~	~~Active~~	[6a]
4.	Hot Water Generator Condensate	222-S	Condensate	C	3.0E-02	Active	
5.	Hot Water Generator Drain	222-S	Sanitary	I	9.5E-04	Active	
6.	Distilled Water Generator Drain	222-S	Distilled	I	5.7E-04	Active	
7.	Cold Sump 1 to 6	222-S	Sanitary/Rain	I	1.4E-04	Active	
8.	Laboratory and Restroom Sinks	222-S	Sanitary	I	5.0E-01	Active	
9.	Sump 8	219-S	Sanitary	I	1.4E-04	Active	
~~10.~~	~~Sump 8~~	~~291-S~~	~~Condensate/Sanitary/Raw~~	~~I~~	~~2.1E-04~~	~~Active~~	[6b]
~~11.~~	~~Exhaust Fan Cooling Water~~	~~291-S~~	~~Raw~~	~~I~~	~~1.4E-02~~	~~Active~~	[6a]
~~12.~~	~~Exhaust Fan Turbine Condensate~~	~~222-SA~~	~~Condensate~~	~~I~~	~~1.4E-02~~	~~Active~~	[6a]
~~13.~~	~~Cell Heater Condensate~~	~~219-S~~	~~Condensate/Sanitary~~	~~C~~	~~3.5E-03~~	~~Active~~	[6a]
~~14.~~	~~219-S Waste Tank Cooling Jacket Drain~~	~~219-S~~	~~Condensate~~	~~I/C~~	~~n/a [9]~~	~~Inactive~~	[6b]
~~15.~~	~~Vacuum Pump Cooling Jacket~~	~~219-S~~	~~Raw~~	~~I/C~~	~~n/a~~	~~Inactive~~	[6b]
~~16.~~	~~Vacuum Pump Cooling Water~~	~~219-S~~	~~Raw~~	~~C~~	~~n/a~~	~~Inactive~~	[6b]
~~17.~~	~~Sump 5 Vacuum Pump Cooling Water~~	~~219-S~~	~~Raw~~	~~C~~	~~n/a~~	~~Inactive~~	[6b]
		Total			4.6E+00 [7]		
		Maximum			5.0E+01 [8]		

NOTES:

[1] Strikeout items indicate an eliminated contributor stream at 6/95

[1a] This table updates Table C.5-1 and Figure C.5-1 of the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)

[2] Raw Water = Untreated Columbia River Water, Sanitary = Potable Water (suited for drinking)

[3] I - Intermittent, C - Continuous, I/C - Continuous when operating

[4] Flow rate based on total annual flow divided by 525,600 minutes (one year)

[5] Active = Source that is presently discharging, Inactive = Source Presently not discharging

[6] Reason for Change
(a) Implementation if BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
(b) Source eliminated but not part of BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)

[7] Total batch flow to TEDF

[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001, Rev. 1-B)

[9] n/a = not applicable

B.3 T-PLANT

Project W-291 combines the chemical sewer systems of T Plant and T Plant Laboratory (head end) into one stream for discharge into the TEDF. This action eliminates the discharge of these effluents to the soil via the 216 T-1 and 4 ditches.

The post BAT/AKART head end effluent will consist of a small amount of incidental water entering the system from such sources as steam condensate, evaporative coolers, housekeeping water, and waterline leaks. All head end liquid will be collected in a new collection tank prior to being pumped to the T Plant collection tank. Flow rate will be totalized. A similar system will be used for the main portion of T Plant. T Plant has eliminated waste water from its air compressors (using air cooled units) and from the chiller units associated with fuel rod storage. Upon eliminating these two large contributors, T Plant waste stream generators will be limited to steam condensate, housekeeping water, and outdoor sumps.

Waste generated in Buildings 221-T and 271-T and the 211 Area will be collected in a centralized tank located in the basement of 221-T. Before pumping it from the building, the waste flow will be totalized and monitored for beta activity and pH. If established limits of these parameters are exceeded, the instrumentation will sound an alarm and flow to TEDF will be automatically stopped. The piping system will divert the waste steam to an existing tank for additional storage. The second tank will also provide the means to receive and pump acceptable waste once the out-of-limit condition has been rectified while the objectionable liquid is held in the first tank awaiting disposition. Further diversionary capability is available by pumping the waste stream from either of the basement tanks to an existing tank in Building 271-T for storage or subsequent transfer to the T Plant canyon waste stream.

The waste stream leaving T Plant will merge at a new manhole with streams from 271-TA and 222 T and 224 T. These two stream will consist of steam condensate from the respective buildings. A Local Control Unit (LCU) near the new manhole will monitor the pertinent parameters of the total waste stream. Results of this monitoring will be transmitted to the control function of the TEFD. Physical tie-in to the TEFD will be downstream of the LCU. All lines leading to the retention basins and the two ditches will be cut and sealed.

For a stream schematic and a source description of T Plant sources, refer to Figure B-3 and Table B-3, respectively.

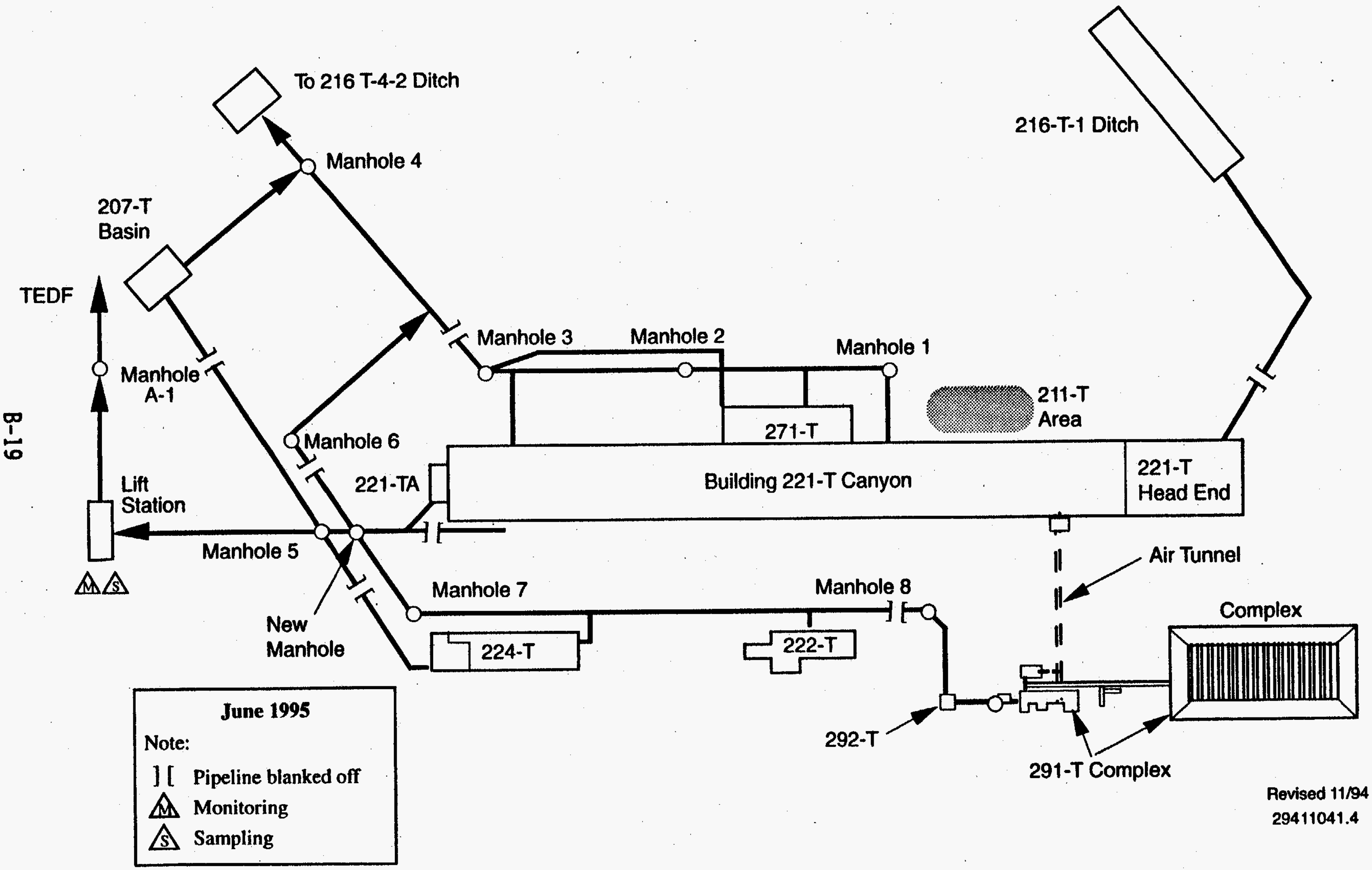

Figure B-3. T-Plant Site Plan (Revised 06/30/95).

Table B-3. T-Plant Waste Water Sources to TEDF (Revised 06/30/95) [1,1a].

	Source	Bldg	Effluent Type [2]	Flow [3]	Flow Rate (gal/min) [4]	Status [5]	Changes [6]
1.	Electrical Gallery Sump	221-T	Raw	I	1.4E-2	Active	
2.	Pipe/Operating Gallery Floor Drains	221-T	Raw	I	6.9E-4	Active	
3.	Steam Condensate	271-T	Sanitary	I/C	3.5E-1 1.3E+0	Active	[6d]
4.	Floor Drains	271-T	Raw	I	6.9E-3	Active	
5.	Sumps	211-T	Raw/Rain	I	1.4E-3	Active	
~~6.~~	~~Sump 214-T~~	~~214-T~~	~~Raw~~	~~I~~	~~1.4E-3~~	~~Active~~	[6c]
~~7.~~	~~PWR Cooling Water~~	~~221-T~~	~~Raw~~	~~C~~	~~6.0E+0~~	~~Active~~	[6a]
8.	Pipe Gallery steam Condensate	221-T	Raw	C	6.9E-2	Active	
~~9.~~	~~Compressor Cooling Water~~	~~271-T~~	~~Raw~~	~~C~~	~~6.0E+0~~	~~Active~~	[6a]
10.	Swamp Cooler Effluent	271-T	Sanitary	I/C	6.9E-2	Active	
11.	Steam Condensate	221-TA	Raw	I/C	~~1.4E-2~~ 9.7E-1	Active	[6d]
12.	Steam Condensate	224-T	Sanitary	I/C	~~3.5E-2~~ 9.9E-1	Active	[6d]
13.	Heating Coil	291-T	Sanitary	C	0.0E+0	Terminated	
14.	Control Room Floor Drns	221-T	Raw	I	1.4E-3	Active	
~~15.~~	~~Plasma Torch Cooling wtr~~	~~221-T~~	~~Sanitary~~	~~I/C~~	~~0.0E+0~~	~~Terminated~~	[6b]
16.	Process Cell Sump	221-T	Raw	I	3.5E-3	Active	
~~17.~~	~~Waste Tank TK-1~~	~~221-T~~	~~Raw~~	~~I~~	~~0.0E+0~~	~~Inactive~~	[6b]
18.	Swamp Cooler Effluent	221-T	Sanitary	I	3.5E-2	Active	
~~19.~~	~~Welder Cooling Water~~	~~221-T~~	~~Raw~~	~~I/C~~	~~0.0E+0~~	~~Terminated~~	[6b]
20.	Basement Laboratory Sump	221-T	Raw	I	1.4E-3	Active	
21.	Heating and Ventilation System	221-T	Raw	I	3.5E-2	Active	
22.	Upper Floor Sumps	221-T	Raw	I	3.5E-3	Active	
		Total			3.5E+0 [7]		
		Maximum			1.1E+2 [8]		

NOTES:

[1] Strikeout items indicate eliminated contributors at 6/95
[1a] This table updates Tables F/G.5-1 and Figures F/G.5-1 in the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw Water = Untreated Columbia River Water, Sanitary = Potable Water
[3] I = Intermittent, C = Continuous, I/C = Continuous where operating
[4] Flow rate based on total annual flow divided by 525,600 minutes (one year). Instantaneous flow could be higher than estimated
[5] Active = Source that is presently discharging, Inactive = source presently not discharging
[6] Reason for change
(a) Implementation of BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
(b) Source eliminated but not part of BAT/AKART
(c) Misidentified source does not exist.
(d) flow increase after reevaluation of steam condensate flow
[7] Total flow to TEDF based on average values. Flow could fluctuate between maximum flow and total flow
[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001, Rev. 1-B)

B.4 284-W POWER PLANT

The 284-W Power Plant waste water stream includes discharges from the 284-WB Packaged Boiler, 282-W Reservoir, 283-W Water Treatment Facility, and the 277-W Fabrication Shop. The 284-W Power Plant consists of two constant flow sources and eight intermittent discharge sources. The 277-W Fabrication Shop effluent is the first contributor to the stream, followed by the 284-WB Power Plant, the 283-Water Treatment, and then the 282-W Reservoir.

B.4.1 282-W RESERVOIR

The 282-W Reservoir contains river water pumped from the 100-B and the 100-D Area River Pumphouse. This reservoir has a capacity of 11,356,200 L (3,000,000 gal), it's overflow weir piping is sized for a maximum flow of 1,514 L (400 gal/min). The water level in the reservoir is normally maintained by automatic level controllers via inlet valves. The two valves automatically trip or cycle closed upon high level alarms, currently set for a level 15 cm (6 in.) below overflow weir. Should the reservoir overflow, the water discharges into the TEDF effluent line. The 282 Pumphouse floor drains discharge into the pumphouse sump and than is pumped to the TEDF effluent line. The 282 Inlet Weir floor drains discharge into the TEDF effluent line.

B.4.2 277-W FLOOR DRAINS

The floors in the 277-W Fabrication Shop are washed down three times per year and drain to the process sewer. Administrative controls prevent cutting oils and machine oils from being discharged to the floor drains. Water used for testing pumps and hydrotesting fabricated tanks is discharged to the floor drains. Testing is done on an as-needed basis and could be conducted several times per year as required. Pump tests are performed in a pit that has a capacity of 272,550 L (72,000 gal). Hydrotesting can use up to 37,854 (10,000 gal) of water per test. Any hydrotesting or large volumes of water generated from testing will be discharged via piping in the floor trench, which receives its effluent from a metering pump at less than 95 L/min (25 gal/min). The Fabrication Shop contributes three of the eight intermittent sources.

B.4.3 277-W STEAM JET CONDENSATE

A steam jet (steam ejector) is used occasionally and the steam condensate that is produced is discharged. The steam jet is assumed to be used once per week and to produce 19 L (5 gal) condensate per use. The average volume discharge is estimated to be 0.00189 L/min (0.0005 gal/min). This stream along with fire system water is discharged through the floor trench into the TEDF line.

B.4.4 283-W SAMPLE DRAIN AND SAMPLE SINK

The automatic sampling equipment and sample sink in the 283-W Water Treatment Facility receive sanitary water from the monitoring and sampling equipment used in the facility. The automatic sampling equipment and sample drain discharge at an average annual rate of 11.4 L/min (3.0 gal/min) and 5 L/min (1.3 gal/min), respectively. This flows into an existing floor drain trench and then into the 283-W TEDF line. The Pumproom drains flow into the sump and are pumped into the 283-W TEDF line. The Pipe and Valve Operating Gallery flow into an existing floor drain trench and then into the 283-W TEDF line. The clearwell overflow flows through an air gap into the 283-W TEDF line. All of these combine into one line leaving the building, which then connects to the TEDF line coming from 282-W.

B.4.5 284-WB NEW PACKAGE BOILER

There are four sources from the new package boiler. These sources are all intermittent sanitary sources that will discharge to the TEDF. Of all 284-WB sources, cooling water is a continuous stream and the largest contributor from the 284-WB Facility.

The water softener regenerate contributor is a spent brine solution that reconditions the zeolite water softener units. The softener regenerate has the highest concentration of dissolved solid, being about 9% sodium chloride by weight.

The boiler blowdown waste source consist of two separate operations, continual and batch. The continual blowdown removes the minerals that naturally concentrate in the bottom of the boiler. The batch blowdown contributor is a periodic discharge from the operation of blowing down the boilers to remove solids from the boiler; this blowdown occurs once per shift.

The combined liquid effluent enters the outside discharge line through a sump inside the facility.

For a stream schematic and a source description of the 284-W Powerhouse, refer to Figure B-4 and Table B-4.

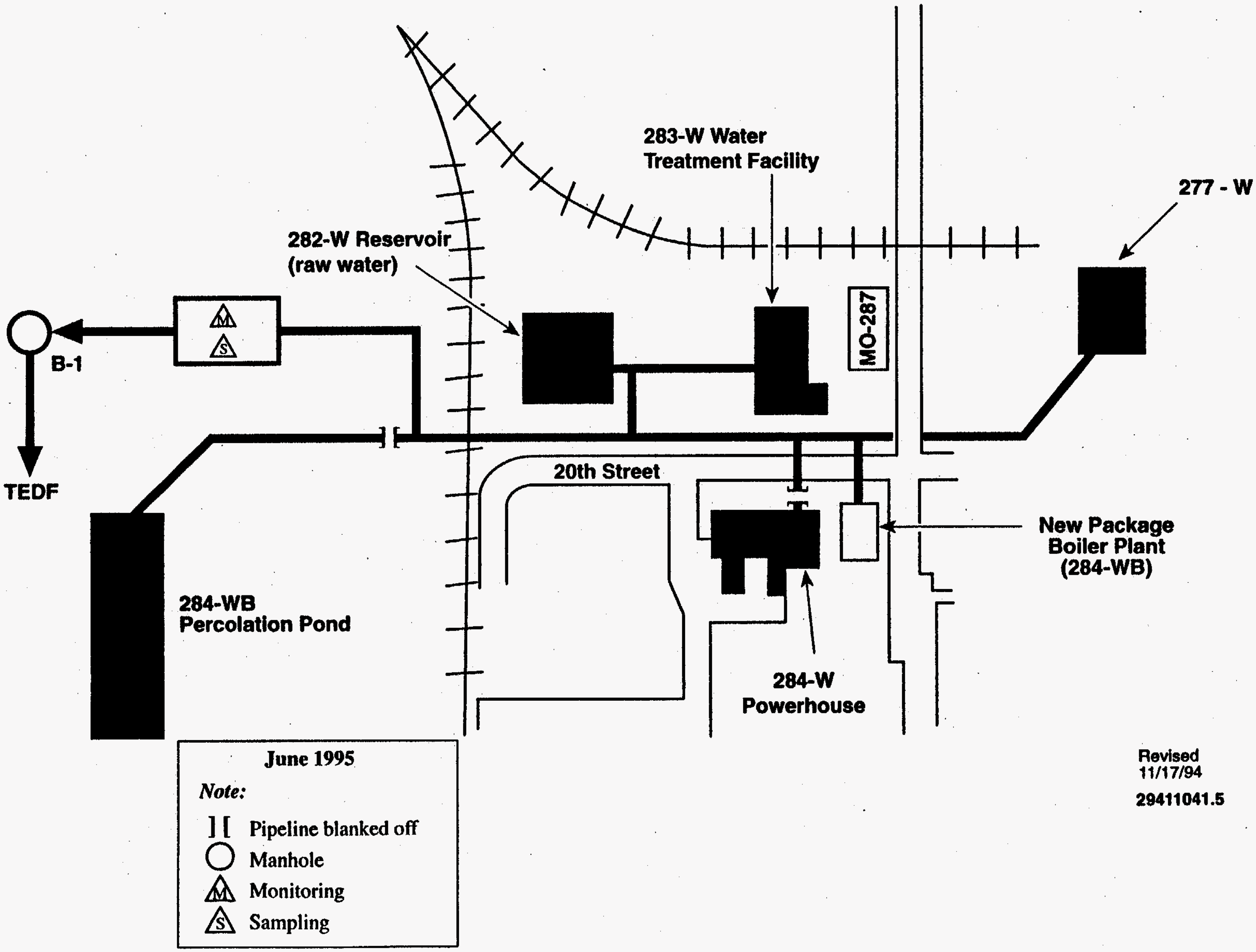

Figure B-4. Power Plant Flow Schematic (Revised 06/30/95).

Table B-4. 284-W Power Plant Waste Water Sources [1,1a].

	Sources	Bldg	Water Type [2]	Flow [3]	Flow Rate (gal/min) [4]	Status [5]	Change [6]
1.	Reservoir overflow	282-W	Raw	I	8.0E0-1	Active	
~~2.~~	~~Filter backwash~~	~~283-W~~	~~Sanitary~~	~~I~~	~~2.8E+01~~	~~Active~~	[6a]
~~3.~~	~~Cooling water~~	~~284-W~~	~~Sanitary~~	~~C~~	~~5.5E+01~~	~~Active~~	[6a]
~~4.~~	~~Boiler blowdown~~	~~284-W~~	~~6X Sanitary~~	~~C~~	~~2.0E+01~~	~~Active~~	[6a]
~~5.~~	~~Water softener regenerate~~	~~284-W~~	~~36X Sanitary~~	~~I~~	~~2.0E+00~~	~~Active~~	[6a]
6.	Floor drains	277-W	Raw	I	3.0E-01	Active	
~~7.~~	~~Welding cooling water~~	~~277-W~~	~~Raw~~	~~I/C~~	~~2.0E-01~~	~~Active~~	[6b]
8.	Steam jet condensate	277-W	Sanitary	I	5.0E-04	Active	
9.	Fire water blowdown	277-W	Raw	I	9.5E-05	Active	
~~10.~~	~~Compressor cooling water~~	~~277-W~~	~~Raw~~	~~I/C~~	~~2.4E-1~~	~~Active~~	[6b]
11.	283-W sample drain line	283-W	Sanitary	C	3.0E+00	Active	[6c]
12.	283-W sample sink line	283-W	Sanitary	C	1.3E+00	Active	[6c]
13.	Pump pit drain	284-WB	Sanitary	I	0.0E+00	Active	[6a]
14.	Cooling water	284-WB	Sanitary	I	5.5E+01	Active	[6a]
15.	Boiler blowdown	284-WB	Sanitary	I/C	2.0E+01	Active	[6a]
16.	Water softener regenerate	284-WB	Sanitary	I	2.0E+00	Active	[6a]
17.	Clearwell overflow	283-W	Sanitary	I	0.0E+00	Active	[6d]
18.	Pump pit drain	282-W	Raw	I	0.0E+00	Active	[6d]
19.	Pump pit drain	283-W	Sanitary	I	0.0E+00	Active	[6d]
20.	Valve gallery drains	283-W	Sanitary	I	0.0E+00	Active	[6d]
		Total			8.2E+01 [7]		
		Maximum			3.4E+02 [8]		

NOTES:

[1] Strikeout items indicate eliminated contributor streams at 6/95
[1a] This table updates Table J.5-1 and Figure J.5-1 of the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw Water = Untreated Columbia River Water Sanitary = Potable Water (suited for drinking)
[3] I = Intermittent, C = Continuous, I/C = Continuous when operating
[4] Based on total annual flow divided by 525,600 minutes (one year)
[5] Active = source that is presently discharging,
Inactive = Source presently not Discharging
[6] Reason for change
(a) Replacement of the 284-W Power Plant with new oil-fired package boiler
(b) Source reduced or eliminated but not part of BAT/AKART (WHC-SD-W049H-ER-003, Rev. 0-C)
(c) Newly identified and incorporated in 216 Permit
(d) New waste streams are a result of implementing BAT/AKART as of 11/30/94
[7] Total flow to TEDF
[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001, Rev. 1-B)

B.5 PUREX CHEMICAL SEWER

B.5.1 PUREX CHEMICAL SEWER WASTE WATER STREAM DESCRIPTION

The PUREX Chemical Sewer (CSL) consists of non-process building services waste water and non-contact non-radioactive process heat exchange effluent. During deactivation the CSL is expected to be in the range of 757 to 1,135 L/min (200 to 300 gal/min) but may exceed 1,893 L/min (500 gal/min) during extreme temperatures.

Radiologically, the CSL is expected to contain extremely low concentrations of contaminants, only slightly above the levels in natural background waters. An incident during the first decade of operation on the PUREX Plant is known to have contaminated the CSL pipe with plutonium, which might be expected to leach into the stream.

The PUREX CSL collects waste water from the service areas of the PUREX Plant Building (Building 202-A and supporting facilities). Most of these effluents are fairly clean, consisting of steam condensate from ventilation air heaters, water cooler drains, shower drains, and floor drains. The floor drains, especially in the P&O Gallery, AMU, and 211 Building have a potential for chemical contamination.

Input lines to the CSL leave the 202-A Building and the 211-A Area and connect to two vitrified clay headers, one running 24 m (80 ft.) east of manhole No. 3, and one running west for 241 m (790 ft.) along the front of the 202-A Building. The east leg collects effluent from sink and floor drains from the P&O Gallery, battery room, laboratory cold change rooms, and flash tank 618-1. Between manholes No. 2 and No. 3, the 30-cm (12-in.) west leg collects steam condensate from several sources and effluents from the laboratory ventilation room floor drains, water stills, compressor room floor drains, process blower room floor drains, and service blower room floor drains. Four legs enter manhole No. 2; a 15-cm (6-in.) line floor drain effluents, a 2.5 cm (1-in.) steam condensate line, an 20-cm (8-in.) line from the P&O Gallery floor drains west of column 31 and from the AMU, and the 20-cm (8-in.) continuation of the CSL leg. The 20-cm (8-in.) header between manholes No. 1 and No. 2 collects several heater condensates and floor drains. Two lines a 15-cm (6-in.) drain and overflow line from the 2901-A water tower and a 7-cm (3-in.) raw water supply line, feed manhole No. 1.

The CSL leaves the 202-A Building from manhole No. 3 via a 30-cm (12-in.) vitrified clay pipe. This feeds into a 38-cm (15-in.) vitrified clay pipe at manhole No. 8. The 38-cm (15-in.) line continues to the 216-A-42E diversion box, which diverts the flow to the 216-A-42 retention basin if the stream displays high radiation levels or high or low pH, or if the stream contains hazardous chemicals. The disposition of water in the basin is based on sample analyses. From the 216-A-42E diversion box, CSL effluents flow through the 216-A-29-A control structure which routs them through a short section of high-density polyethylene pipe into the old cooling water line (CWL). The CWL pipe then conducts the effluent to the 216-B-3 Pond.

For a stream schematic and a source description of the PUREX chemical sources, refer to Figure B-5 and Table B-5, respectively.

Figure B-5. PUREX Plant Chemical Sewer Flow Schematic (Revised 06/30/95).

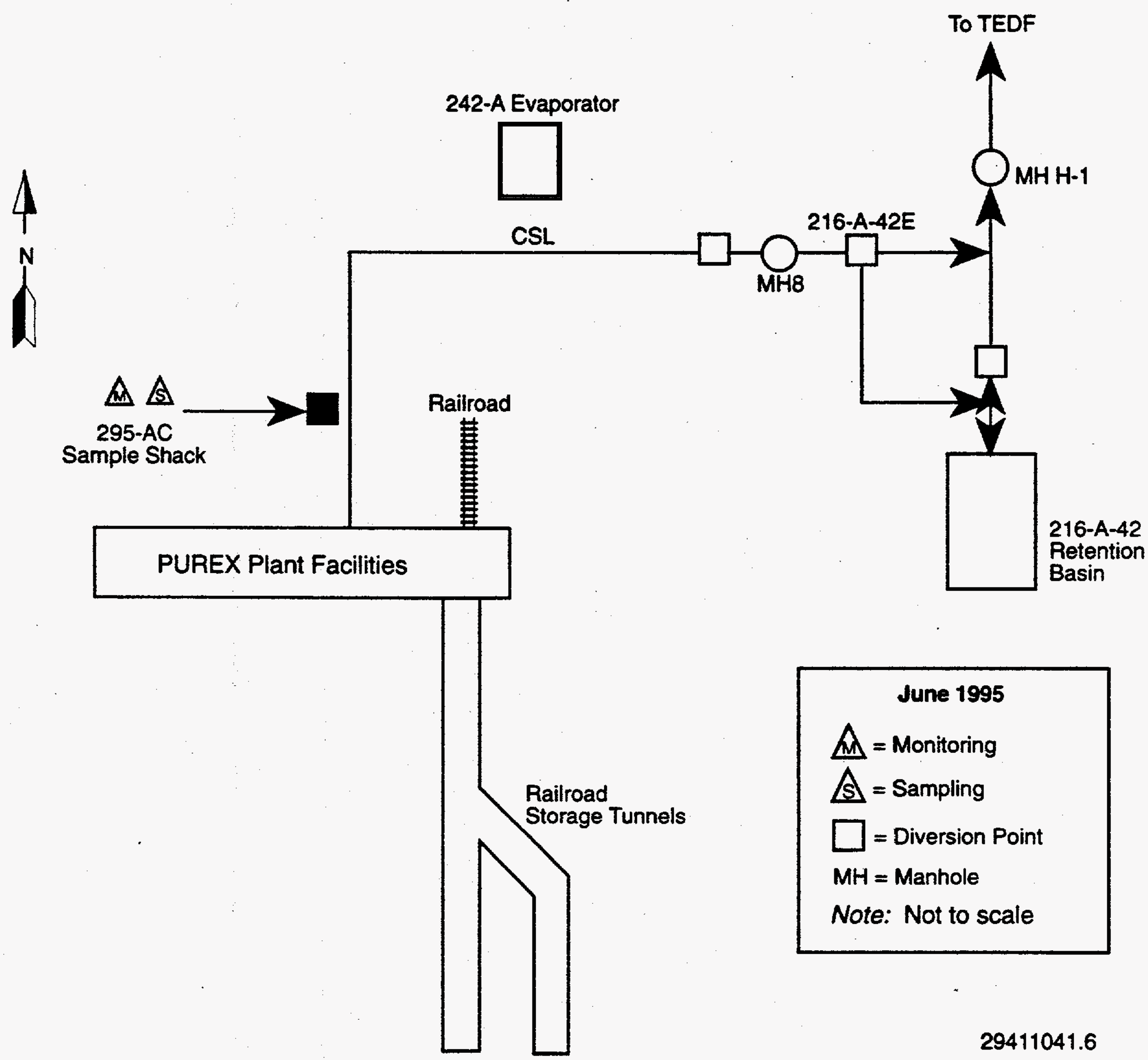

Table B-5. PUREX Chemical Sewer Sources to TEDF (Revised 06/30/95) [1,1a]. (2 sheets)

	Sources	Bldg	Effluent Type [2]	Flow [3]	Rate (gal/min) [4]	Status [5]	Change [6]
1.	P&O Gallery east of column 30	202-A	Raw/ Sanitary/ condensate	I	M	Active	
2.	Flash tank Tk-618-1	202-A	Raw/ Condensate	C	C	Active	
3.	Battery room	202-A	Raw/ Sanitary/ Condensate	I	M	Active	
4.	Lab cold change rooms	202-A	Sanitary	I/C	L	Active	
5.	Lab ventilation heating condensate	202-A	Condensate	I/C	C	Active	
6.	Lab ventilation room floor drains	202-A	Raw/ Sanitary/ Condensate	I/C	M	Active	
7.	Lab water still condensate	202-A	Condensate/ Demin	I/C	C	Active	
8.	Compressor room floor drains	202-A	Raw/Sani/ Condensed Air Moisture	I/C	M	Active	
9.	Process blower room floor drains	202-A	Raw/Sani/ Condensate	I/C	M	Active	
10.	Process blower room heating condensate	202-A	Condensate	I/C	C	Active	
11.	Service blower room floor drains	202-A	Raw/Sani/ Condensate	I/C	M	Active	
12.	Service blower room heating condensate	202-A	Condensate	I/C	C	Active	
13.	Sanitary water heater	203-A	Condensate	I	C	Active	
~~14.~~	~~Car unloading spot #1 sump~~	~~202-A~~	~~Condensate/ Rain~~	~~I~~	~~M~~	~~Active~~	[6a]
15.	Manhole #2 steam trap	202-A	Condensate	I/C	C	Active	
16.	203-A Area	202-A	Rain/Raw/ Condensate	I	M	Active	
17.	AMU/P&O Gallery west of column 31	202-A	Raw/Sani/ Condensate	I	M	Active	
18.	Office area heater condensate	202-A	Condensate	I/C	C	Active	
19.	Sanitary pipe trench condensate	202-A	Condensate	I/C	C	Active	
20.	Locker/shower room condensate	202-A	Condensate	I/C	C	Active	
21.	Locker/shower room drains	202-A	Sanitary	I/C	L	Active	
22.	Service area heater #1 condensate	202-A	Condensate	I/C	C	Active	
23.	Instrument/maintenance shop drains	202-A	Raw/Sani/ Condensate	I	M	Active	
24.	Service area heater #2 condensate	202-A	Condensate	I/C	C	Active	
25.	West end storage room condensate	202-A	Condensate	I/C	C	Active	
26.	2711A Air compressor cooling water	2711-A	Raw	I/C	0.0E+00	Inactive	
27.	Raw water rinse line	202-A	Raw	I/C	5.0E+01	Active	

Table B-5. PUREX Chemical Sewer Sources to TEDF (Revised 06/30/95) [1,1a]. (2 sheets)

	Sources	Bldg	Effluent Type [2]	Flow [3]	Rate (gal/min) [4]	Status [5]	Change [6]
28.	T-K 30 Overflow	202-A	Rain/Sanitary	I	00E+00	Active	
29.	Acid vacuum fractionator	202-A	Raw	I/C	00E+00	Inactive	
30.	211-A Building	211-A	Rain/ Condensate/ Sanitary	I	00E+00	Active	
31.	Tk-2901-A Overflow	202-A	Sanitary	C	2.5E+01	Active	
32.	2712A Vacuum pump seal water	2712-A	Raw/Sanitary	C	5.0E+00	Active	
33.	Fourth filter heating condensate	291-AE	Condensate	I/C	6.9E-01	Active	
~~34.~~	~~R-Cell evaporative cooling tower~~	~~202-A~~	~~Sanitary/ Condensate~~	~~C~~	~~n/a~~	~~Inactive~~	[6b]
35.	Nonhazardous waste water concentrator condensate (E-F11 concentrator)	202-A	Condensate	I	3.0E+00	Active	
36.	N-Cell transfer vacuum pump seal water	202-A	Raw	I/C	L	Active	
		Total			2.5E+02 [7]		
		Maximum			6.0E+02 [8]		

NOTES:

[1] Strikeout items indicate eliminated contributor streams at 6/95
[1a] This table updates Table K.5-1, and Figure K.5-1 of the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw Water = Untreated Columbia River Water Sanitary = Potable Water (suited for drinking)
[3] I = Intermittent, C = Continuous
[4] Flow rates designated C, L, and M refer to source groups for which individual flow rate estimates were not available: C = Condensate, L = Low-risk Drains; and M = Moderate-risk drains based on total annual flow divided by 525,600 minutes (one year)
[5] Active = source that is presently discharging, Inactive = Source presently not discharging
[6] Reason for Change
(a) Source eliminated by BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
(b) Source eliminated but not part of BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
[7] Total flow to TEDF
[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001 Rev. 1-B)

B.6 B-PLANT CHEMICAL SEWER

The B-Plant Chemical Sewer (BCE) liquid effluent stream consists of HVAC sanitary steam condensate, raw water from process and instrument air compressors, effluent from the demineralizer operation, and storm water.

Two major contributors to the BCE are cooling water from the air compressor in the 271-B Building, and the overflow from the Emergency Sanitary Water Tower, 2902-B. A small fraction of the stream comes from HVAC units, both 225-B and 221-B HVAC units are operated continuously.

Portions of the BCE liquid effluents stream have the potential for contamination from radiological and non-radiological contamination. To avoid the release of radiologically contaminated water to the BCE, water from potentially contaminated areas in the 221-B are collected in two 2,650-L (700-gal) tanks (tank TK-900A and TK-900B) for batch operations. When the liquid volume of TK-900A is met, the flow is diverted to tank TK-900B, samples are collected from TK-900B and analyzed for total alpha, total beta, and pH to determine if contaminated water has accumulated in the tank. If the water in TK-900A and TK-900B is determined to be radiologically contaminated, the contents are diverted to tank TK-10-1 and sent to the 200 East Area Tank Farms for disposal. If the samples are free of radiological contamination, tank TK-900A or TK-900B is discharged to the BCE. An offline beta/gamma radiation monitor with pH monitoring is also available for TK-900A and TK-900B to provide continuous monitoring in lieu of the batch-sampling method.

A small fraction of the stream comes from HVAC units, both 225-B and 221-B HVAC units which operate continuously. Because the HVAC treats the inflow air potentially contaminated air, being drawn downstream, has a low probability of reaching and contaminating the HVAC condensate.

For a stream schematic and a source description of the B Plant chemical sewer sources, refer to Figure B-6 and Table B-6, respectively.

Figure B-6. B Plant Chemical Sewer Site Plan (Revised 06/94/95).

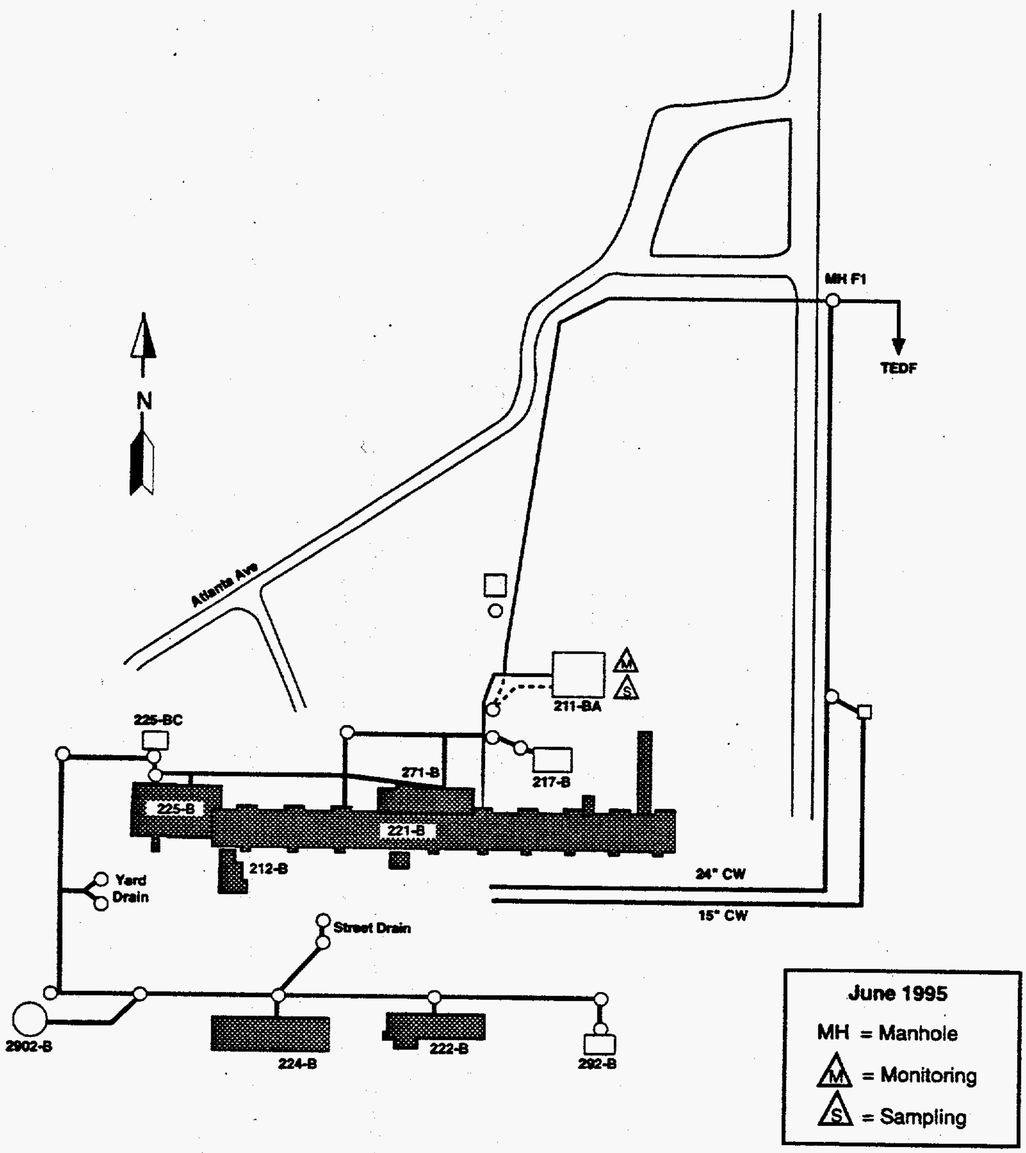

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Table B-6. B-Plant Chemical Sewer Waste Water Sources to TEDF (Revised 6/30/95) [1,1a]. (2 sheets)

	Source	Bldg	Effluent Type [2]	Flow [3]	Rate (gal/min) [4]	Status [5]	Change [6]
1.	Steam heater condensate floor drains	292-B	Sanitary	I	5.0E-01	Active	
2.	HVAC	222-B	Sanitary	I	5.0E-01	Active	
3.	HVAC	224-B	Sanitary	I	5.0E-01	Active	
4.	Street Drains (2)	224-B	Storm	I	6.0E-02	Active	
5.	Emergency Sanitary Water Tower	2902-B	Sanitary	C	1.5E+01	Active	
6.	Street Drain (1)	2902-B	Storm	I	3.0E-02	Active	
7.	Yard Drains (K-3 Area)	225-B	Storm	I	3.0E-02	Active	
8.	Compressor Raw Water And Floor Drains	225-BC	Sani/Raw	C	5.0E+01	Active	
9.	HVAC Condensate, Steam Condensate and Raw Water	225-B	Sani/Raw	I	5.0E-01	Active	
~~10.~~	~~AMU Chemical Makeup Tank Drains, 1st Floor drains and Steam Condensate~~	~~225-B~~	~~Sanitary~~	~~I~~	~~5.0E-01~~	~~Active~~	[6a]
11.	Pipe Operating and Electrical Gallery Steam Condensate, Stairwell 15, 17 and 19 Floor Drains and HVAC, Instrument Air Compressor Sanitary Water	221-B	Sanitary	C	1.0E+01	Active	
12.	Process Air Compressor Condensate, Steam Condensate, Raw and Sanitary Water Sump	271-B	Sanitary	C	5.0E+1	Active	
13.	Floor drains, Basement sinks, 11 & 13 HVAC, Steam Condensate & Sanitary Water and Sump	271-B	Sanitary	I	1.0E+00	Active	
~~14.~~	~~Steam Condensate, Sanitary Water and Floor Drains~~	~~217-B~~	~~Sanitary~~	~~I~~	~~5.0E-01~~	~~Active~~	[6b]
15.	Tank Farm Steam Condensate & Raw Water	211-B	Sani/Raw	I	5.0E-01	Active	
~~16.~~	~~Pump Basin~~	~~211-B~~	~~Storm~~	~~I~~	~~0.0E+00~~	~~Inactive~~	[6b]
~~17.~~	~~Tank Car Unloading Drain~~	~~211-B~~	~~Storm~~	~~I~~	~~0.0E+00~~	~~Inactive~~	[6b]
18.	Steam Condensate drain (1)	276-B	Sanitary	I	0.0E+00	Active	
~~a.~~	~~Pump/Demineralizer Regeneration drain~~	~~211-B~~					[6a]
b.	Raw Water Drain	211-B					
19.	Stairwell 5 & 7 Steam Condensate	221-B	Sanitary	I	5.0E-01	Active	
20.	6-in. Chemical Sewer	221-B	Sani/Raw	I	0.0E+00	Active	
21.	Stairwell 3 Steam Condensate	221-B	Sanitary	I	5.0E-01	Active	
	Total				1.3E+02 [7]		
	Maximum				2.0E+02 [8]		

Table B-6. B-Plant Chemical Sewer Waste Water Sources to TEDF (Revised 6/30/95) [1,1a]. (2 sheets)

NOTES:

[1] Strikeout items indicate eliminated contributor streams at 6/95
[1a] This table updates Table N.5-1, and Figure N.5-1 of the 200A TEDF Wastewater Engineering Report (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw Water = Untreated Columbia River Water, Sanitary = Potable Water (suited for drinking)
[3] I = Intermittent, C= Continuous
[4] Flow rates are based on total annual flow divided by 525,600 minutes (one year)
[5] Active = source that is presently discharging, Inactive = Source presently not discharging
[6] Reason for Change
(a) Source eliminated by BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
(b) Source eliminated but not part of BAT/AKART, (WHC-SD-W049H-ER-003, Rev. 0-C)
[7] Total flow to TEDF
[8] Maximum flow that could be generated (WHC-SD-W049H-FDC-001, Rev. 1-B)

B.7 242-A-81 WATER SERVICES BUILDING

The 242-A-81 stream consists of raw water and some waste collected as a result of backflushing of two strainers located in the Water Services Building. The backflushed water flows out of the strainer to a drain which ties in to TEDF.

The backflush process is triggered by a high differential pressure across the strainers. This action reverses the flow of the river water through the strainers. When this reversal of flow occurs the backflush is diverted to a sump in the 242-A-81 Building's floor.

For a stream schematic and a source description of the 242-A-81 Water Services Building, refer to Figure B-7 and Table B-7, respectively.

Figure B-7. 242-A-81 Water Services Building.

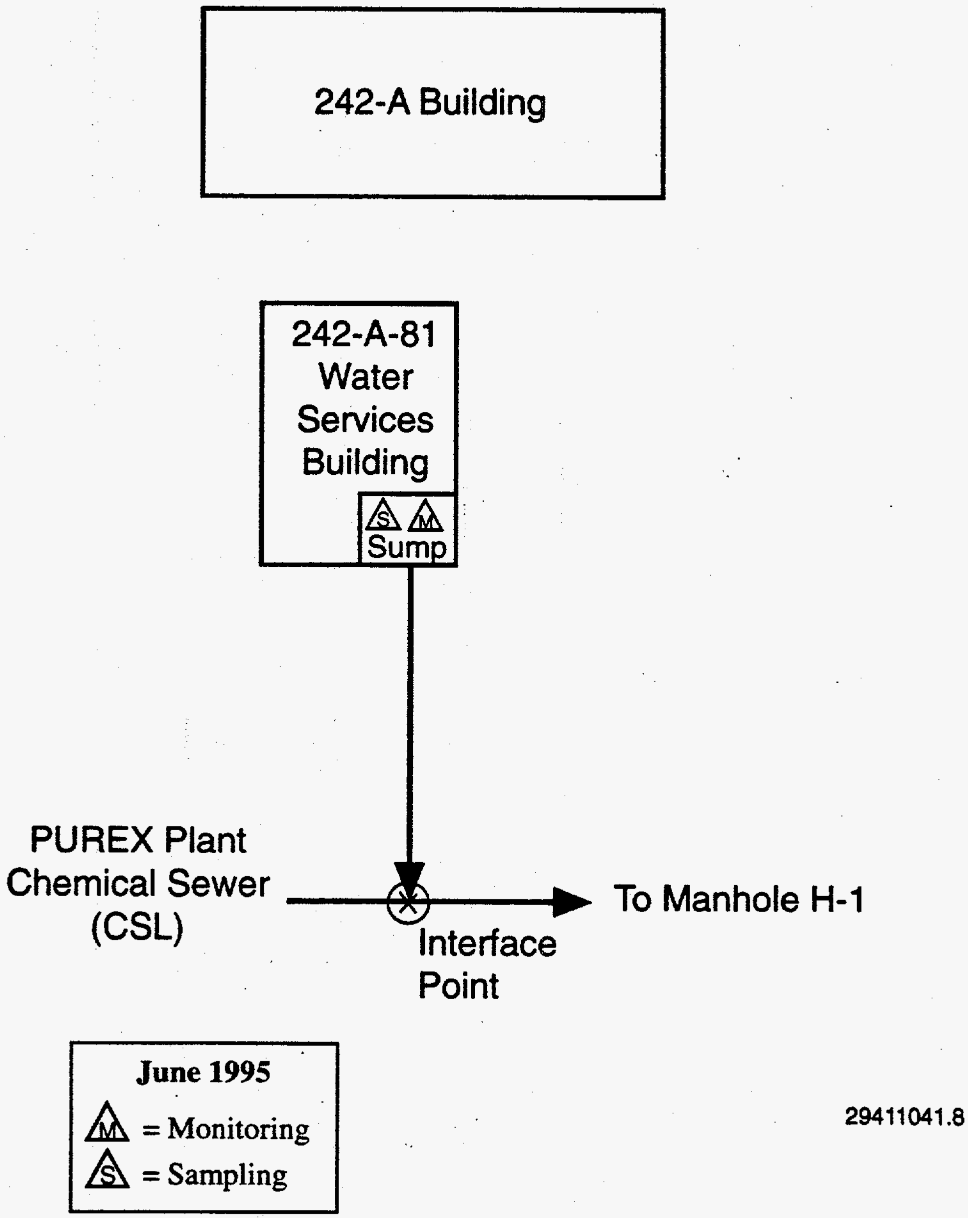

Table B-7. 242-A-81 Water Services Waste Water Sources to TEDF (Revised 06/30/95) [1,1a].

	Sources	Bldg	Effluent Type [2]	Flow [3]	Rate (gal/min) [4]	Status [5]	Change [6]
1	Strainer	242-A-81	Raw	I	1.2E+00	Active	
2	Backflow Preventer	242-A-81	Raw	I	1.8E-01	Active	
		Total			1.4E+00 [7]		
		Maximum			5.0E+02 [8]		

NOTES:

[1] 242-A-81 Stream is considered a miscellaneous stream. No BAT/AKART performed or required by the 200A TEDF Wastewater Engineering Report (ER) (WHC-SD-W049H-ER-003, Rev. 0-C)
[1a] This table updates Table T.5-1 of the 200A TEDF Wastewater ER (WHC-SD-W049H-ER-003, Rev. 0-C)
[2] Raw water = Untreated Columbia River water
[3] I = Intermittent, C = Continuous
[4] Flow rates (gal/min) are based on total annual flow divided by 525,600 minutes (one year)
[5] Active = source that is presently discharging
[6] Reason for change
[7] Total flow to TEDF
[8] Maximum flow that could be generated

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APPENDIX C

STATE WASTE DISCHARGE PERMIT REQUIREMENTS

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APPENDIX C
STATE WASTE DISCHARGE PERMIT REQUIREMENTS

Appendix C will be completed by approximately April 1995, when the U.S. Department of Ecology is expected to issue the permit.

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APPENDIX D

GROUNDWATER PROTECTION STANDARDS
(WASHINGTON ADMINISTRATIVE CODE 173-200)

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APPENDIX D
GROUNDWATER PROTECTION STANDARDS

These groundwater protection standards are derived from the "Water Quality Standards for Ground Waters of the State of Washington," *Washington Administrative Code* (WAC) 173-200.

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Table D-1. Groundwater Protection Standards. (4 sheets)

Contaminant	Criterion	
I. Primary and secondary contaminants and radionuclides		
A. Primary contaminants		
Barium[1]	1.0	milligrams/ liter (mg/L)
Cadmium[1]	0.01	mg/L
Chromium[1]	0.05	mg/L
Lead[1]	0.05	mg/L
Mercury[1]	0.002	mg/L
Selenium[1]	0.0 1	mg/L
Silver[1]	0.05	mg/L
Fluoride	4.0	mg/L
Nitrate (as N)	10.0	mg/L
Endrin	0.0002	mg/L
Methoxychlor	0.1	mg/L
1,1,1-trichlorethane	0.020	mg/L
2-4-D	0.10	mg/L
2,4,5-TP Silvex	0.01	mg/L
Total coliform bacteria	1/100	ml
B. Secondary contaminants		
Copper[1]	1.0	mg/L
Iron[1]	0.30	mg/L
Manganese[1]	0.05	mg/L
Zinc[1]	5.0	mg/L
Chloride	250.0	mg/L
Sulfate	250.0	mg/L
Total dissolved solids	500.0	mg/L
Foaming agents	0.5	mg/L
pH	6.5 - 8.5	
Corrosivity	noncorrosive	
Color	5 color units	
Odor	3 threshold	
C. Radionuclides		
Gross alpha particle activity	15.0	picocurie/ liter/(pCi/L)
Gross beta particle radioactivity		
Gross beta activity	50.0	pCi/L
Tritium	20,000.0	pCi/L
Strontium-90	8.0	pCi/L
Radium 226 and 228	5.0	pCi/L
Radium-226	3.0	pCi/L

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Contaminant	Criterion	
II. Carcinogens		
Acrylamide	0.02	microgram liter µg/L
Acrylonitrile	0.07	µg/L
Aldrin	0.005	µg/L
Aniline	14.0	µg/L
Aramite	3.0	µg/L
Arsenic'	0.05	(µg/L)
Azobenzene	0.7	µg/L
Benzene	1.0	µg/L
Benzidine	0.0004	µg/L
Benzo(a)pyrene	0.008	µg/L
Benzotrichloride	0.007	µg/L
Benzyl chloride	0.5	µg/L
Bis(chloroethyl)ether	0.07	µg/L
Bis(chloromethyl)ether	0.0004	µg/L
Bis(2-ethylhexyl)phthalate	6.0	µg/L
Bromodichloromethane	0.3	µg/L
Bromoform	5.0	µg/L
Carbazole	5.0	µg/L
Carbontetrachloride	0.3	µg/L
Chlordane	0.06	µg/L
Chlorodibromomethane	0.5	µg/L
Chloroform	7.0	µg/L
4 Chlor-2-methylaniline	0.1	µg/L
4 Chloro-2-methylanaline hydrochloride	0.2	µg/L
o-Chloronitrobenzene	3.0	µg/L
p-Chloronitrobenzene	5.0	µg/L
Chlorthalonil	30.0	µg/L
Diallate	1.0	µg/L
DDT (includes DDE and DDD)	0.3	µg/L
1,2 Dibromoethane	0.001	µg/L
1,4 Dichlorobenzene	4.0	µg/L
3,3' Dichlorobenzene	0.2	µg/L
1,1 Dichloroethane	1.0	µg/L
1,2 Dichloethane (ethylene chloride)	0.5	µg/L
1,2 Dichloropropane	0.6	µg/L
1,3 Dichloropropane	0.2	µg/L
Dichlorvos	0.3	µg/L
Dieldrin	0.005	µg/L
3,3' Dimethoxybenzidine	6.0	µg/L
3,3 Dimethylbenzidine	0.007	µg/L
1,2 Dimethylhydrazine	60.0	µg/L

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Contaminant	Criterion	
2,4 Dinitroluene	0.1	μg/L
2,6 Dinitroluene	0.1	μg/L
1,4 Dioxane	7.0	μg/L
1,2 Diphenylhydrazine	0.09	μg/L
Direct black 38	0.009	μg/L
Direct blue 6	0.009	μg/L
Direct brown 95	0.009	μg/L
Epichlorohydrin	8.0	μg/L
Ethyl acrylate	2.0	μg/L
Ethylene dibromide	0.001	μg/L
Ethylene thiourea	2.0	μg/L
Folpe	20.0	μg/L
Furazolidone	0.02	μg/L
Furium	0.002	μg/L
Heptachlor	0.02	μg/L
Heptachlor epoxide	0.009	μg/L
Hexachlorobenzene	0.05	μg/L
Hexachlorocyclohexane (alpha)	0.001	μg/L
Hexachlorocyclohexane (technical)	0.05	μg/L
Hexachlorodibenzo-p-dioxin, mix	0.00001	μg/L
Hydrazine/hydrazine sulfate	0.03	μg/L
Lindane	0.06	μg/L
2 Methoxy-5-nitroaniline	2.0	μg/L
2 Methylaniline	0.2	μg/L
2 Methylaniline hydrochloride	0.5	μg/L
4,4' Methylene bis(N,N'-dimethyl) Aniline	2.0	μg/L
Methylene chloride (dichloromethane)	5.0	μg/L
Mirex	0.05	μg/L
Nitrofurazone	0.06	μg/L
N-Nitrosodiethanolamine	0.03	μg/L
N-Nitrosodiethylamine	0.0005	μg/L
N-Nitrosodimethylamine	0.002	μg/L
N-Nitrosodiphenylamine	17.0	μg/L
N-Nitroso-di-n-propylamine	0.01	μg/L
N-Nitrosopyrrolidine	0.04	μg/L
N-Nitroso-di-n-butylamine	0.02	μg/L
N-Nitroso-N-methylethylamine	0.004	μg/L
PAH	0.01	μg/L
PBBs	0.01	μg/L
PCBs	0.01	μg/L
o-Phenylenediamine	0.005	μg/L
Propylene oxide	0.01	μg/L

Table D-1. Groundwater Protection Standards. (4 sheets)

Contaminant	Criterion	
2,3,7,8-Tetrachlorodibenzo-p-Dionxin	0.0000006	µg/L
Tetrachloroethylene (perchloroethylene)	0.8	µg/L
p,α,α,α,-Tetrachlorotoluene	0.0004	µg/L
2,4 Toluenediamine	0.002	µg/L
o-Toluidine	0.2	µg/L
Toxaphene	0.08	µg/L
Trichloroethylene	3.0	µg/L
2,4,6-Trichlorophenol	4.0	µg/L
Trimethyl phosphate	2.0	µg/L
Vinyl chloride	0.02	µg/L

[1]Metals are measured as total metals. Statutory authority: *Revised Code of Washington* (RCW) 90.48.035.90-22-023, *Washington Administrative Code* WAC 173-200-040, filed 10/31/90, effective 12/1/90.