

ENGINEERING CHANGE NOTICE	1. ECN 658585 <hr/> Proj. ECN
Page 1 of <u>2</u>	

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. M. J. Brown, Process Engineering, S6-72, 372-2972	4. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Date 05/17/00
	6. Project Title/No./Work Order No. 200 Area TEDF Effluent Sampling and Analysis Plan	7. Bldg./Sys./Fac. No. TEDF	8. Approval Designator E, Q
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) WJC HNF-SD-LEF-PLN-002, Rev. 1B	10. Related ECN No(s). N/A	11. Related PO No. N/A
12a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. N/A	12c. Modification Work Completed N/A Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECNs only) N/A Design Authority/Cog. Engineer Signature & Date

13a. Description of Change This Treated Effluent Disposal Facility (TEDF) Sampling and Analysis Plan has been updated to incorporate changes associated with the revised State Waste Discharge Permit ST 4502, issued April 18, 2000. The effluent variability study discussions have been removed as this was a requirement of the earlier permit. Additional modifications have been made to incorporate the latest permit conditions.	13b. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

14a. Justification (mark one) Criteria Change <input checked="" type="checkbox"/> Design Improvement <input type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const. <input type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>	14b. Justification Details This document is being updated to reflect the latest ST 4502 Permit conditions.
---	--

15. Distribution (include name, MSIN, and no. of copies)	
M. W. Bowman	S6-72
M. J. Brown	S6-72
M. L. Griffin	S6-71
P. M. Olson	S6-72
M. D. LeClair	S6-72 (3 copies)
K. J. Lueck	S6-72
N. J. Sullivan	S6-72
R. W. Szelmeczka	S6-72
M. J. Warn	S6-71

RELEASE STAMP

MAY 18 2000

DATE: _____

STA: 4

HANFORD
RELEASE

ID: S

ENGINEERING CHANGE NOTICE

Page 2 of 2

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

658585

16. Design Verification Required

- Yes
 No

17. Cost Impact

ENGINEERING

- Additional \$ _____
Savings \$ _____

CONSTRUCTION

- Additional \$ _____
Savings \$ _____

18. Schedule Impact (days)

- Improvement _____
Delay _____

19. 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 13. Enter the affected document number in Block 20.

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

20. 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
N/A		

21. Approvals

	Signature	Date		Signature	Date
Design Authority	M. J. Brown <i>MJB</i>	5/17/00	Design Agent	_____	_____
Cog. Eng.	M. J. Brown <i>MJB</i>	5/17/00	PE	_____	_____
Cog. Mgr.	N.J. Sullivan <i>NJS</i>	5/18/00	QA	_____	_____
QA	M. J. Warn <i>MJW</i>	5/18/00	Safety	_____	_____
Safety	_____	_____	Design	_____	_____
Environ.	M. W. Bowman <i>MWB</i>	5/18/00	Environ.	_____	_____
Other	_____	_____	Other	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

200 Area Treated Effluent Disposal Facility Effluent Sampling and Analysis Plan

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford

P.O. Box 1000

Richland, Washington

200 Area Treated Effluent Disposal Facility Effluent Sampling and Analysis Plan

M. J. Brown
Fluor Hanford

M. D. LeClair
Science Applications International Corporation

Date Published
May 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford

P.O. Box 1000
Richland, Washington


Release Approval 5/18/00
Date

MAY 18 2000		
DATE:		ID:
STA:		⑤

Release Stamp

LEGAL DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

This report has been reproduced from the best available copy.

Printed in the United States of America

Total Pages: 19

This page intentionally left blank.

CONTENTS

1.0 OVERVIEW 1
1.1 PURPOSE 1
1.2 SCOPE 1
1.3 BACKGROUND 2
2.0 EFFLUENT MONITORING REQUIREMENTS 4
2.1 CONTINUOUS MONITORING 4
2.2 ROUTINE SAMPLING..... 4
2.3 NONCOMPLIANCE AND OVERFLOW SAMPLING..... 8
3.0 ANALYTICAL PROTOCOL..... 8
4.0 QUALITY CONTROL..... 9
5.0 DATA ANALYSIS AND MANAGEMENT 9
6.0 REPORTING..... 10
7.0 RECORDS MANAGEMENT 10
8.0 REFERENCES..... 11

LIST OF FIGURES

Figure 1. 200 Area Treated Effluent Disposal Facility..... 1

LIST OF TABLES

Table 1. Combined Monitoring and Sampling Criteria. 1
Table 2. Effluent Limitations 7

LIST OF TERMS

BAT/AKART	Best available technology/all known, available, and reasonable treatment
COC	Chain of Custody/Sample Analysis Request
DMR	Discharge Monitoring Report
DOE-RL	U.S. Department of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
ECO	Environmental Compliance Office
EPA	U.S. Environmental Protection Agency
ETF/LERF	200 Area Effluent Treatment Facility/Liquid Effluent Retention Facility
LEMIS	Liquid Effluent Monitoring Information System
LIMS	Laboratory Information Management System
LWPF	200 Area Liquid Waste Processing Facilities
MOU	Memorandum of Understanding
PNNL	Pacific Northwest National Laboratory
PQL	Practical Quantification Levels
QA	Quality Assurance
QC	Quality Control
QAPjP	Quality Assurance Project Plan
RCW	Revised Code of Washington
SAF	Sample Authorization Form
SAP	Sampling and Analysis Plan
TEDF	Treated Effluent Disposal Facility
WAC	Washington Administrative Code
WSCF	Waste Sampling and Characterization Facility

1.0 OVERVIEW

1.1 PURPOSE

This Sampling and Analysis Plan (SAP) has been developed to comply with effluent monitoring requirements at the 200 Area Treated Effluent Disposal Facility (TEDF), as stated in Washington State Waste Discharge Permit No. ST 4502 (Ecology 2000). This permit, issued by the Washington State Department of Ecology (Ecology) under the authority of Chapter 90.48 Revised Code of Washington (RCW) and Washington Administrative Code (WAC) Chapter 173-216, is an April 2000 renewal of the original permit issued on April 1995.

1.2 SCOPE

The SAP implements some of the effluent discharge limitations and monitoring requirements set forth in the permit. This SAP specifies the following elements of the TEDF effluent monitoring program:

- Which organization will be responsible for continuous monitoring and sample collection
- What samples will be collected and what parameters will be monitored
- When, where, and how the samples will be collected
- Where and how the samples will be analyzed and what analyses will be performed
- How the resulting analytical data will be reported and managed.

The groundwater monitoring requirements and limitations are addressed in the *Groundwater Monitoring Plan for the Hanford 200 Area Treated Effluent Disposal Facility* (PNNL 2000). Additional permit requirements are implemented by a variety of other TEDF documents including:

- the *Liquid Waste Processing Facilities Quality Assurance Project Plan* (LWPF QAPjP) (HNF 1997),
- the *Memorandum of Understanding (MOU) between Waste Sampling and Characterization Facility (WSCF), 222-S Laboratory, and Liquid Waste Processing Facilities* (Olson et al. 2000), and
- the *Building Emergency Plan for ETF/LERF* (HNF 2000).

1.3 BACKGROUND

The TEDF monitoring program described in the following sections is under the authority of the 200 Area Liquid Waste Processing Facilities (LWPF). Routine effluent monitoring, in accordance with the permit requirements, commenced when the facility began operations in April 1995.

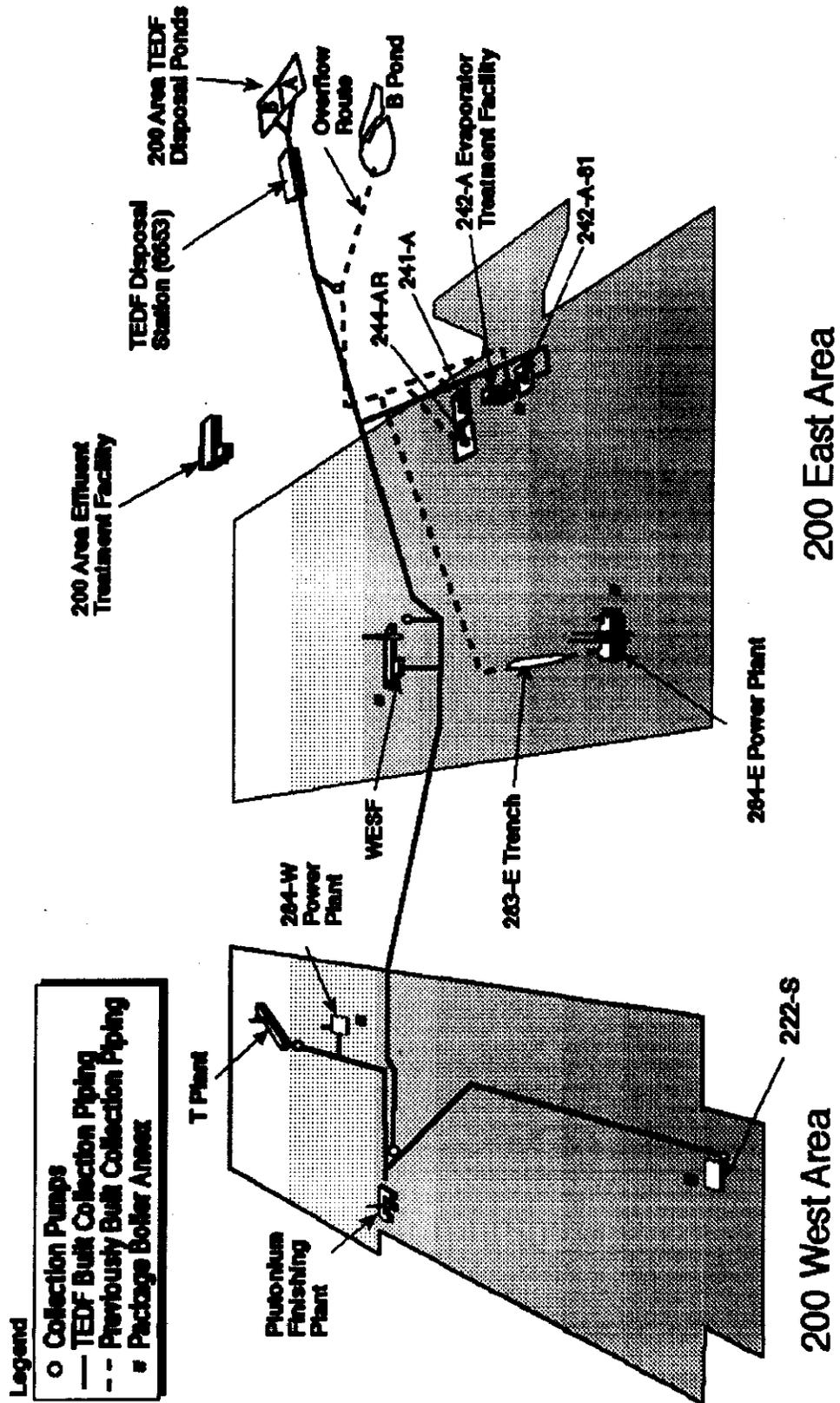
The TEDF is located about 4 kilometers east of the 200 East Area (see Figure 1). The facility collects and disposes of treated, nondangerous liquid effluent streams generated in the 200 East and 200 West Areas of the Hanford Site. The TEDF consists of a 17.7-kilometer long pipeline, which collects effluent from several individual generators and discharges the effluent to two adjacent rock-lined disposal ponds. Each disposal pond is approximately 2 hectares in size and provides for both effluent evaporation and infiltration through the soil. The list of generating facilities that contribute waste to the TEDF is maintained in the *200 Area Treated Effluent Disposal Facility Interface Control Document* (HNF 1998).

The generator waste streams are treated to meet best available technology/all known, available, and reasonable treatment (BAT/AKART) before discharge. All of these waste streams that discharge to the TEDF have not been in direct contact with dangerous waste or radioactive processes. These waste streams include the following:

- Water from the building ventilation, heating, and cooling systems
- Steam condensate from heating potable water
- Condensate of pressurized potable water
- Rainwater from parking lot and exterior paved areas
- Potable (treated) water
- Columbia River water
- Boiler blowdown water
- Discharge from floor drains with limited and strictly controlled usage.

A more complete description of the TEDF and generator waste streams is provided in the *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report* (WHC 1992) and the *200 Area Treated Effluent Disposal Facility Interface Control Document* (HNF 1998).

Figure 1. 200 Area Treated Effluent Disposal Facility.



G00050066

2.0 EFFLUENT MONITORING REQUIREMENTS

Wastewater discharges are monitored according to the permit schedule reiterated in Table 1. The following sections discuss additional monitoring and sampling requirements.

2.1 CONTINUOUS MONITORING

Permit ST 4502 requires the TEDF average monthly flow be restricted to 5.5 million gallons per day (20.8 million liters per day) and the average yearly flow be restricted to 1.7 million gallons per day (6.4 million liters per day). Average flow is calculated as the total volume discharged over the period divided by the number of days in the period. Flow, in addition to pH and conductivity, are monitored on a continuous basis. Brief interruptions for calibration, power failure, or for unanticipated equipment repair or maintenance are allowed. If interruptions exceed 24 hours, grab samples are to be taken daily until continuous monitoring is restored. These samples will be analyzed for pH and conductivity in the field.

The LWPF selects, installs, calibrates, and maintains flow measurement for accuracy using accepted industry standards. Flow measurement devices are calibrated annually. Calibration and maintenance activities are addressed in LWPF maintenance procedures.

2.2 ROUTINE SAMPLING

Permit ST 4502 requires that average monthly (and in some cases daily) effluent discharges do not exceed the concentrations/frequencies defined in Table 2. Discharge is calculated as the sum of discharge concentration measurements for the period divided by the number of measurements taken in the same period. These average values are calculated assuming zero for measurements below the Method Detection Limit and will include all results, even if obtained through more frequent monitoring than required by the permit.

Discharge concentration measurements are obtained via sampling and analysis of the discharge stream. Sampling frequency required for each parameter is defined in Table 1. Sampling normally takes place the first week of each month. Sample scheduling shall consider randomness, laboratory operation, and startup of generator processes.

The LWPF Engineering Group provides detailed instructions to the LWPF Operations for sampling to be conducted. The LWPF Operations is responsible for collecting and packaging the samples, and for shipping the samples if an onsite laboratory is used. Details of these sampling activities are contained in approved alarm response and plant operating procedures available at the TEDF for inspection. These procedures address operation of sampling equipment, sample identification and labeling, chain of custody, sample preservation, sample packaging and shipping, personnel protection measures, and record keeping.

The LWPF sampling efforts are initiated by the Sample Authorization Form (SAF) and/or the Chain of Custody/Sample Analysis Request (referred to as the COC), which are issued as

Table 1. Combined Monitoring and Sampling Criteria. (2 sheets)

Parameter	Sampling Method	Frequency	Method	Volume	Temperature	Retention Time
Carbon tetrachloride	Grab	Quarterly	SW-846 8260A	5	1:1 HCl to pH <2; 4 °C	14 days
Methylene chloride	Grab	Quarterly	SW-846 8260A	5	1:1 HCl to pH <2; 4 °C	14 days
Total Trihalomethanes	Grab	Quarterly	SW-846 8260A	20	1:1 HCl to pH <2; 4 °C	14 days
Chloroform	Grab	Quarterly	SW-846 8260A	5	1:1 HCl to pH <2; 4 °C	14 days
Secondary Standards						
Bis (2-ethylhexyl) phthalate	Grab	Quarterly	SW-846 8270B	10	4 x 1-L aG	7 days for extraction; 40 days after extraction
Total Metals						
Arsenic	Composite	Monthly	EPA 600 200.8	15	1 x 1-L G	180 days
Cadmium	Composite	Monthly	EPA 600 200.8	5	1 x 1-L G	180 days
Chromium	Composite	Monthly	EPA 600 200.8	20	1 x 1-L G	180 days
Iron	Composite	Monthly	SW-846 6010A	100	1 x 1-L G	180 days
Lead	Composite	Monthly	EPA 600 200.8	10	1 x 1-L G	180 days
Manganese	Composite	Monthly	SW-846 6010A	50	1 x 1-L G	180 days
Mercury	Composite	Monthly	EPA 600 200.8	2	1 x 1-L G	180 days
Anions						
Chloride	Composite	Monthly	EPA 600 300	1,000	1 x 500-mL G or P	28 days
Nitrate (as N)	Composite	Monthly	EPA 600 300	100	1 x 500-mL G or P	48 hours
Sulfate	Composite	Monthly	EPA 600 300	10,000	1 x 500-mL G or P	28 days
Other Analytes						
Total Dissolved Solids	Composite	Monthly	EPA 600 160.1	10,000	1 x 500-mL G or P	7 days
Oil and grease	Grab	Quarterly	EPA 1664	10,000	3 x 1-L aG	28 days
Gross alpha	Grab	Monthly	Laboratory Specific ⁵	3 pCi/L	1:1 HCl or H ₂ SO ₄ to pH <2; 4 °C	28 days
Gross beta	Grab	Monthly	Laboratory Specific ⁵	4 pCi/L	1:1 HNO ₃ to pH <2	180 days
Tritium	Grab	Quarterly	Laboratory Specific	2,000 pCi/L	None	180 days
Other Analytes (Continued)						
pH	Continuous	Continuous	Analytical Probe	NA	NA	NA

Table 1. Combined Monitoring and Sampling Criteria. (2 sheets)

Specific Conductivity	Continuous	Continuous	Analytical Probe	NA	NA	NA	NA
Flow	Continuous	Continuous	Flow Meter	NA	NA	NA	NA

Notes:

- a = amber
- EPA = U.S. Environmental Protection Agency
- G = glass
- GADGPC = gross alpha direct gas proportional counting
- GBDPC = gross beta direct proportional counting
- L = liter
- mL = milliliter
- NA = not applicable
- P = polyethylene
- pCi/L = picoCurie per liter
- PQL = practical quantification levels
- s = septum cap

¹ Quarterly is defined as one sample per calendar quarter. January-March, April-June, July-September, and October-December. Monthly is defined as one sample per calendar month

² Other methods that meet the permit-specified PQLs may be substituted

³ Sample volumes may be adjusted according to laboratory directives

⁴ Holding time is the maximum time between sampling and analysis

⁵ Typically, the analysis method for gross alpha is GADGPC and the analysis method for gross beta is GBDPC.

Table 2. Effluent Limitations. (1 sheet)

Analyte	Maximum Average Monthly ¹	Other ²
Volatile Organic Compounds		
Carbon tetrachloride	5 µg/L	---
Chloroform	7 µg /L	---
Methylene chloride	5 µg /L	---
Total trihalomethanes	20 µg /L	---
Organic Compounds		
Bis (2-ethylhexyl) phthalate	10 µg /L	---
Total Metals		
Arsenic (total)	15 µg /L	---
Chromium (total)	20 µg /L	---
Iron (total)	300 µg /L	---
Manganese (total)	50 µg /L	---
Mercury (total)	2 µg /L	---
Anions		
Chloride	58,000 µg /L	116,000 µg/L (Daily Maximum)
Nitrate (as N)	620 µg /L	1,240 µg/L (Daily Maximum)
Total Dissolved Solids		
Total Dissolved Solids	250,000 µg /L	500,000 µg/L (daily maximum)
Flow - total of listed sources ³	5,500,000 gpd	1,700,000 gpd (yearly maximum)

Notes:

gpd = gallons per day

µg /L = micrograms per liter

¹Maximum monthly average = highest allowable parameter concentration calculated as the average of all flow proportional composite sample concentrations measured during a calendar month.

²Daily maximum = highest allowable parameter concentration calculated as the average of all flow proportional composite sample concentrations measured over a day.

³Flow is restricted on an average monthly and yearly basis. Average monthly flow is calculated as the total gallons discharged during a calendar month divided by the number of days in the month. Average yearly flow is calculated as the total gallons discharged during a calendar year divided by the number of day in the year.

needed. These forms are adapted from information in Table 1 and contain at least the following criteria: sample type, sampling frequency, analytical methods, sample containers and volumes, and preservative methods. In addition, the COC form contains: the name(s) of the person(s) collecting the samples, sample location, date and time of sampling, sampling equipment used, any equipment settings that are significant, collection of quality control (QC) samples, and specific protocol documentation. Deviations from standard procedures and any unusual observations are included on a data sheet attached to the COC. The samples are to be representative of the monitored parameter, including any unusual discharge or discharge condition affecting effluent quality (e.g., bypasses, upsets, maintenance-related conditions, etc.).

All permit compliance samples will be obtained from the TEDF Disposal Station (Building 6653), located west of the infiltration ponds as depicted in Figure 1. Composite samples are required for some parameters and grab samples are required for others (see Table 1). In either case, the sample line will first be purged before the sample containers are filled. The composite samples will be collected from a refrigerated composite flow proportional sampler (which feeds off a submerged transfer line) and the grab samples will be collected manually from a sampling tap. All composite samples will be flow proportional, collected on a 24-hour basis. Under low flow conditions (i.e., <50 gpm), a grab sample may be used in place of the composite sample. If a grab sample cannot be obtained due to no flow, the sample will be rescheduled.

Each grab, composite, or quality control sample will be assigned a unique identification number. A COC form will accompany each sample from the sampling station to the laboratory. All samples collected for metal analyses will be unfiltered.

2.3 NONCOMPLIANCE AND OVERFLOW SAMPLING

In addition to the routine sampling described in Section 2.2, there are two other instances where sampling is required by the permit:

- In the event of noncompliance with any permit conditions for any reason, sampling and analysis of the violation shall be conducted.
- In the event of overflow to the C lobe of B pond that exceeds one hour in duration, a grab sample, representative of the overflow, is required to be taken.

Sampling protocols and practices for these samples are consistent with those applied for the routine samples.

3.0 ANALYTICAL PROTOCOL

Sample analysis is to be conducted so as to discern levels as low as the practical quantification levels (PQL) for all constituents or parameters with specific enforcement limits or other monitoring requirements. The PQLs are those specified in the discharge permit. Analytical methods used are those specified in the permit, which are U.S. Environmental Protection Agency (EPA) approved methods from SW-846 (EPA 1992) established under the Clean Water Act (40 CFR 136.3). Equivalent methods may also be used, provided that the specified PQL can be

met. The methods used for the analysis of gross alpha, gross beta, and tritium are laboratory specific, and procedures are available at the laboratory. Specific analytes, analytical methods, PQLs, sample containers, preservative methods, and holding times, for the monitoring program are presented in Table 1.

The effluent samples must be analyzed at an accredited laboratory. Samples are typically analyzed at the WSCF, an onsite chemical laboratory dedicated to the analysis of environmental samples and accredited by the State of Washington. Samples can also be analyzed at an offsite laboratory provided the lab is accredited.

The WSCF is normally notified of upcoming analysis requests and is responsible for conducting the analyses according to the accompanying COC, this SAP, and the LWPF QAPjP (HNF 1997). The WSCF will provide laboratory verification of the data at the bench before the data are input into the Laboratory Information Management System (LIMS) (normally within 30 days of sampling). These results are transmitted to LWPF through an electronic link between LIMS and LWPF's Liquid Effluent Monitoring Information System (LEMIS). A written data report can be used if either LIMS and/or LEMIS are not operational.

4.0 QUALITY CONTROL

Both field and laboratory measurements are used to ensure QC in the sampling and analysis of TEDF effluents. These measures are discussed in detail in the LWPF QAPjP (HNF 1997). Field QC samples are obtained in conjunction with the routine samples. Normally these include one duplicate, one trip blank, and one field blank in every twenty sampling events. Laboratory QC samples will normally be run alongside all compliance samples per EPA Method and/or Laboratory Specific Method. Normally these include the PQL check standard, method blank, matrix spike, matrix spike duplicate, and laboratory duplicate.

5.0 DATA ANALYSIS AND MANAGEMENT

The LWPF Engineering Group will review the analytical data in LEMIS, calculate average effluent limitations (monthly and daily) and average flow rates (monthly and yearly), and take action as appropriate. The results will be compared with the permit enforcement limitations (Table 2). Should one or more of the parameters exceed the respective enforcement limit, the LWPF's Environmental Compliance Officer (ECO) will be notified.

The LWPF Engineering Group will perform data validation as described in the data validation section of the LWPF QAPjP (HNF 1997). The LWPF Engineering Group will release the data for external distribution after this review. Engineering will also prepare the Discharge Monitoring Reports (DMRs) from LEMIS for submittal to U.S. Department of Energy-Richland Operations (DOE-RL) and subsequently to Ecology. Engineering is also responsible for maintaining and managing LEMIS, which includes entering SAF information, sample analysis results, and continuous monitoring data (i.e., pH, conductivity, and flow) into the database.

6.0 REPORTING

The first monitoring period begins on the effective date of the permit. Analytical data will be reported to Ecology via the DMR form, EPA 3320-1. The LWPF Engineering Group prepares the DMR, which DOE-RL subsequently submits to Ecology according to the following schedule:

<u>Due Date</u>	<u>Period Covered</u>
May 15	January through March
August 14	April through June
November 14	July through September
February 14	October through December

The DMR is to be received by Ecology no later than the 45th day following the completed reporting period and must be submitted whether or not the facility is discharging. The noted exception to this reporting schedule is in the case of a noncompliance. In the event of a permit violation, any repeat sampling and analysis results must be submitted to Ecology within 30 days of becoming aware of the violation.

All reports or information submitted to Ecology in compliance with Permit ST 4502 and any permit modification requests will be certified in accordance with the provisions of Section G.1 of the permit. This includes but is not limited to DMRs and Noncompliance Notification Report.

7.0 RECORDS MANAGEMENT

Sampling and analytical records, all original continuous monitoring instrumentation recordings, DMRs, calibration and maintenance records, operation logs, upset reports, and other reports and plans required by the permit will be retained onsite for a minimum of three years. The period will be extended in the case of unresolved litigation regarding the discharge of pollutants at the TEDF, or as requested by the Director of Ecology. The LWPF Engineering Group will maintain much of this information within LEMIS and in hard copies. The WSCF will also maintain the analytical results, instrument calibration data, laboratory quality assurance (QA)/QC information, and raw analytical data. All check standard recovery data and duplicate measurements will be available to Ecology upon request.

The LWPF Engineering Group will also maintain this SAP and other related documents. Any changes to controlled documents will be traceable through change control documentation.

8.0 REFERENCES

- Ecology, 2000, *State Waste Discharge Permit No. ST 4502*, issued April 18, 2000, Washington Department of Ecology, Kennewick, Washington.
- EPA, 1992, *Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods*, EPA-SW-846, Third Edition, U.S. Environmental Protection Agency, Washington, D.C.
- HNF, 1997, *Liquid Waste Processing Facilities Quality Assurance Project Plan*, HNF-SD-LEF-QAPP-002, Waste Management Federal Services Hanford, Inc., Richland, Washington.
- HNF, 1998, *200 Area Treated Effluent Disposal Facility Interface Control Document*, HNF-SD-W049H-ICD-001, Rust Federal Services Hanford Inc., Richland, Washington.
- HNF, 2000, *Building Emergency Plan for ETF/LERF*, HNF-IP-0263-ETF, Waste Management Hanford, Richland, Washington.
- Olson, P. M., D. M. Southwick, and M. J. Brown, 2000, *Memorandum of Understanding (MOU) between Waste Sampling and Characterization Facility (WECF), 222-S Laboratory, and Liquid Waste Processing Facilities*, dated January 6, 2000, Waste Management Hanford, Richland, Washington.
- PNNL, 2000, *Groundwater Monitoring Plan for the Hanford Site 200 Area Treated Effluent Disposal Facility*, PNNL-13032, Pacific Northwest National Laboratory, Richland, Washington.
- WHC, 1992, *200 Area Treated Effluent Disposal Facility (Project W-049H) Wastewater Engineering Report*, WHC-SD-W-49H-ER-003, Westinghouse Hanford Company, Richland, Washington.

This page intentionally left blank.