HNF-3100
Revision 0

Hanford Site Comprehensive Compliance Evaluation Report— July 1, 1997 through June 30, 1998

Date
September 1998

Prepared for the U.S. Department of Energy

FLUOR DANIEL HANFORD, INC.
Richland, Washington

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

RELEASE AUTHORIZATION

Document Number:	HNF-3100
Document Title:	Hanford Site Comprehensive Compliance Evaluation Report

This document, reviewed in accordance with DOE Order 1430.1D, "Scientific and Technical Information Management," and DOE G 1430.1D-1, "Guide to the Management of Scientific and Technical Information," does not contain classified or sensitive unclassified information and is:

APPROVED FOR PUBLIC RELEASE

V. L. Birkland 8/13/98

V. L. Birkland
Lockheed Martin Services, Inc.
Document Control/Information Clearance

Reviewed for Applied Technology, Business Sensitive, Classified, Copyrighted, Export Controlled, Patent, Personal/Private, Proprietary, Protected CRADA, Trademark, Unclassified Controlled Nuclear Information.

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Summary
- [ ] Visual Aid
- [ ] Full Paper
- [ ] Other
- [ ] Journal Article
- [ ] Internet
- [ ] Software
- [x] Report

B. Document Number HNF-3100

C. Title
Hanford Site Comprehensive Compliance Evaluation Report

D. Internet Address

E. Required Information

1. Is document potentially Classified? [x] No [ ] Yes (MANDATORY)
E. M. Greager
Manager's Signature Required

If Yes _____ [ ] No [ ] Yes Classified
ADC Signature Required

2. Internal Review Required? [x] No [ ] Yes
If Yes, Document Signatures Below

Counsel _____

Program _____

3. References in the Information are Applied Technology [x] No [ ] Yes
Export Controlled Information [x] No [ ] Yes

4. Does Information Contain the Following: (MANDATORY)
a. New or Novel (Patentable) Subject Matter? [x] No [ ] Yes
If "Yes", Disclosure No.: _____
b. Information Received in Confidence, Such as Proprietary and/or Inventions?
[x] No [ ] Yes If "Yes", Affix Appropriate Legends/Notices.
c. Copyrights? [x] No [ ] Yes If "Yes", Attach Permission.
d. Trademarks? [x] No [ ] Yes If "Yes", Identify in Document.

5. Is Information requiring submission to OSTI? [ ] No [x] Yes
If Yes UC-2000 and B&R-EW3130010

6. Release Level? [x] Public [ ] Limited

7. Charge Code R1A14 Task Plan 28 HAN72800

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting _____
2. Group Sponsoring _____
3. Date of Conference _____
4. City/State _____
5. Will Information be Published in Proceedings? [ ] No [ ] Yes
6. Will Material be Handed Out? [ ] No [ ] Yes

H. Author/Requestor
R. D. Haggard
(Print and Sign)

Responsible Manager
E. M. Greager
(Print and Sign)

I. Reviewers

Reviewers	Yes	Print	Signature	Public Y/N (If N, complete J)
General Counsel	[ ]			Y / N
Office of External Affairs	[ ]			Y / N
DOE-RL	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N

J. If Information Includes Sensitive Information and is not to be released to the Public indicate category below.

- [ ] Applied Technology
- [ ] Personal/Private
- [ ] Proprietary
- [ ] Business-Sensitive
- [ ] Predecisional
- [ ] UCNI
- [ ] Protected CRADA
- [ ] Export Controlled
- [ ] Procurement-Sensitive
- [ ] Patentable
- [ ] Other (Specify) _____

Information Clearance Approval
VB
8/13/98

K. If Additional Comments, Please Attach Separate Sheet

A-6001-401 (10/97)

CONTENTS

APPENDICES

ACRONYMS

BHI	Bechtel Hanford, Inc.
BMP	best management practice
DESI	Duke Engineering & Services, Inc.
DOE-RL	U.S. Department of Energy, Richland Operations Office
DYN	DynCorp Tri-Cities Services, Inc.
EPA	U.S. Environmental Protection Agency
HNF	Hanford Nuclear Facility (document identifier)
NPDES	National Pollutant Discharge Elimination System
PNNL	Pacific Northwest National Laboratory
PPT	Pollution Prevention Team
SWCSCE	Storm Water Comprehensive Site Compliance Evaluation
SWPPP	Storm Water Pollution Prevention Plan
WMH	Waste Management Federal Services of Hanford, Inc

METRIC CONVERSION CHART

Into metric units			Out of metric units		
If you know	Multiply by	To get	If you know	Multiply by	To get
Length			**Length**		
inches	25.40	millimeters	millimeters	0.0393	inches
inches	2.54	centimeters	centimeters	0.393	inches
feet	0.3048	meters	meters	3.2808	feet
yards	0.914	meters	meters	1.09	yards
miles	1.609	kilometers	kilometers	0.62	miles
Area			**Area**		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.092	square meters	square meters	10.7639	square feet
square yards	0.836	square meters	square meters	1.20	square yards
square miles	2.59	square kilometers	square kilometers	0.39	square miles
acres	0.404	hectares	hectares	2.471	acres
Mass (weight)			**Mass (weight)**		
ounces	28.35	Grams	grams	0.0352	ounces
pounds	0.453	Kilograms	kilograms	2.2046	pounds
short ton	0.907	metric ton	metric ton	1.10	short ton
Volume			**Volume**		
fluid ounces	29.57	Milliliters	milliliters	0.03	fluid ounces
quarts	0.95	Liters	liters	1.057	quarts
gallons	3.79	Liters	liters	0.26	gallons
cubic feet	0.03	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.76456	cubic meters	cubic meters	1.308	cubic yards
Temperature			**Temperature**		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
Force			**Force**		
pounds per square inch	6.895	Kilopascals	kilopascals	1.4504×10^{-4}	pounds per square inch

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Second Ed., 1990, Professional Publications, Inc., Belmont, California.

This page intentionally left blank.

HANFORD SITE COMPREHENSIVE COMPLIANCE EVALUATION REPORT— JULY 1, 1997 THROUGH JUNE 30, 1998

1.0 INTRODUCTION

On September 9, 1992, the U.S. Environmental Protection Agency (EPA) issued General Permit No. WA-R-00-000F, Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES) for Storm Water Discharges Associated with Industrial Activity to the U.S. Department of Energy, Richland Operations Office (DOE-RL).

DOE-RL submitted a Notice of Intent to comply with this permit to the EPA in accordance with the General Permit requirements on October 1, 1992. On February 14, 1994, EPA issued a *Storm Water General Permit Coverage Notice* (WA-R-00-A17F).

The *Hanford Site Storm Water Pollution Prevention Plan* (SWPPP) (WHC-SD-EN-EV-021) was certified by DOE-RL on September 24, 1996, in compliance with Part IV.B(i) of the General Permit.

As required by General Permit, Section IV, Part D, Section 4.c, an annual report must be developed by DOE-RL and retained onsite to verify that the requirements listed in the General Permit are implemented.

This document fulfills the requirement to prepare an annual report and contains the results of inspections of the storm water outfalls listed in Appendix B. This report also describes the methods used to conduct the Storm Water Comprehensive Site Compliance Evaluation (SWCSCE) as required in the General Permit, Part IV, Section D.4.c; summarizes the results of the compliance evaluation; and documents significant leaks and spills.

The timeframes for this SWCSCE report is July 1, 1997 through June 30, 1998. There were no significant spills or leaks during this reporting period.

2.0 METHODOLOGY

The pollution prevention team (PPT) members surveyed the storm water outfalls to determine the discharge status of each. In addition to the survey, the 183-N Facility chlorine use areas were inspected for the conditions identified in Section 8.4 of the SWPPP.

Appendix A contains a list of the PPT members, the outfalls each team member inspected, and the inspection dates.

Appendix B contains the SWCSCE results. These reports are based on site inspections performed by the cognizant PPT member. The inspections consisted of a walk-around of the site; observation of physical and topographical features, including signs of change and/or erosion; evaluation of potential contamination; and effectiveness of applicable best management practices (BMP) for the site.

3.0 RESULTS

The storm water outfalls identified in Appendix A were inspected against the criteria identified in Section 2.0. Corrective action was required at discharge point E-10 in the 100 N Area to remove dirt that was placed around the 1304 Emergency Dump Tank to facilitate completion of an asbestos abatement project. The dirt could have been a potential source of pollutants. The asbestos project has been completed and the dirt removed. Storm water outfalls B-3 and E-9 in the 100 K Area, and A-1 and B-2 in the 100 D Area, and F-9 and G-11 in the 100 F Area will be inspected again later in the summer because high river levels during the June inspection covered part of the discharge locations. The results of these inspections will be summarized in future annual evaluation reports.

Five additional outfalls were added during this reporting period. Three of the outfalls previously were identified in Hanford Site NPDES permit No. WA-000374-3 because of discharges from the 100 N Area. However, these outfalls are no longer receiving discharges from the 100 N Area facilities and are being removed from Permit WA-0000374-3. Because there is still a potential for storm water run-off to enter these outfalls, these outfalls will be covered under the storm water permit.

A fourth outfall added this year originates from the 337 Building east parking lot maintenance cover, which discharges to an open culvert that discharges to the Columbia River.

The fifth outfall added is the 100 K Area outfall number 004. This outfall is the primary liquid effluent discharge point in the K Area and is permitted under NPDES Permit WA-000374-3. Under this permit outfall 004 is used to discharge 183 KE Water Plant filter backwash effluent following settling of suspended solids in one of the deactivated water plant basins. Outfall 004 also periodically releases raw water from the 183-KE Basin being used for fish rearing activities. All discharge streams are nonradioactive. When the reactor was operational, this was used to discharge once-through cooling water to the river. Consequently, the steel pipelines used to collect and route effluent to the river became contaminated with low-level radionuclides.

This same underground piping collects storm water run off from portions of 100 K Area. All effluents going out the 004 outfall are sampled/analyzed monthly for radionuclides. These results, which are published in the yearly release reports, have historically shown the quantity of radiological contamination not to impact the environment.

These new outfalls will be assigned numbers and identified on maps on the next revision to the SWPPP.

In addition to the added outfalls, 19 outfalls were identified as being removed from this report because there is no longer storm water or pollutant sources associated with the locations. The 19 outfalls eliminated from the report are as follows:

100-F	100-H	100-K	100-N	
H12	A1	F13	F11	F12
H13	L13	G11	F13	I16
			I17	I18
			I21	I22
			J23	J24
			J25	K26
			L27	

The Pacific Northwest National Laboratory (PNNL) operates and maintains research and development laboratories (SIC 8731), which are not subject to the storm water regulations. However, PNNL contributes to the SWCSCE and SWPPP as a BMP for potential outfalls associated with laboratory operations within the 300 Area. A review of 300 Area outfalls A, B, and D did not reveal any activities or operations, or spills of hazardous substances that would contribute pollutants to the Columbia River from storm water sources.

Outfall J-15 (100 F Area) was not included as part of this evaluation. PPT members for PNNL historically have inspected this outfall. PNNL maintains two vacant structures, WBF-1 and WBF-2, which are adjacent to outfall J-15 (boat ramp). A discussion with PNNL indicated that there are no current or known historical operations that could contribute pollutants to outfall J-15 from these structures. PNNL recommended that this outfall be deleted from the SWCSCE and SWPPP as the storm water regulations do not apply to this location.

As noted in the previous SWCSCE Report for the period of July 1, 1996, through June 30, 1997, the SWPPP assessment conducted by DOE-RL on August 14, 1997 determined that the SWPPP should be updated. Efforts to review the SWPPP in detail to identify all requirements/commitments and then assess their necessity will continue in FY 1999 and result in a comprehensive revision of the SWPPP during FY 99.

4.0 REFERENCES

WHC-SD-EN-EV-021, *Hanford Site Storm Water Pollution Prevention Plan*, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

WHC-SD-ENV-EE-001, *Hanford Site Storm Water Comprehensive Site Compliance Evaluation Report*, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

POLLUTION PREVENTION TEAM MEMBERS

This page intentionally left blank.

HANFORD SITE POLLUTION PREVENTION TEAM MEMBERS Report Period 07/01/97 to 06/30/98	
Member: B. P. Atencio (Brad)	Company: PNNL Office Phone: 376-8662
Responsibilities: 300 Area Storm Water Outfalls A,B,D	Inspection Dates: 7/21,22/98
Member: J. G. Woolard	Company: BHI
Responsibilities: 100 B/C Area Storm Water Outfalls A, B, C 100 D Area Storm Water Outfalls A, B 100 F Area Storm Water Outfalls B, C, F, G, H 100 H Area Storm Water Outfalls A, C, D, E, F, G, H, I, J 100 K Area Storm Water Outfalls A, B, E, F, G 100 N Area Storm Water Outfalls D, E, F, G, I, J, K, L Envrironmental Restoration spills and releases	Inspection Dates: 6/3/98 6/3/98 6/3/98 6/3/98 6/3/98 6/4/98
Member: G. S. Hunacek (Jerry) Responsibilities: 100 K Area Storm Water Outfall 004	Company: DESI Inspection Dates: 6/22/98
Member: B. J. Dixon (Brian)	Company: DYN Office Phone: 376-7053
Responsibilities: 300 Area Storm Water Outfalls E-I 300 Area Spills and Releases 100 B/C Area Storm Water Outfall E 100 D Area Storm Water Outfall C	Inspection Dates: 5/28/98 5/28/98 5/28/98
Member: R. D. Haggard (Bob) Responsibilities: Compilation of Comprehensive Site Compliance Evaluation Report	Company: WMH Office Phone: 376-3723

Note: 100 K Area storm water outfalls B and E, 100 D Area outfalls A and B, 100 F Area outfalls F and G, require further evaluation after water levels recede.

This page intentionally left blank.

APPENDIX B

STORM WATER COMPREHENSIVE SITE COMPLIANCE EVALUATION RESULTS

This page intentionally left blank.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 B/C Area Figure A-1, Sheet 2	A	1	Storm water run-off could flow over riprap to close proximity of the river. The riprap is located in the area of the 116-C-4 Outfall. This area is posted as "Underground Radioactive Material". On the terrace above the riprap is a roped-off area that is posted "Cave-in potential". The riprap creates a channel toward the river consisting of irregularly shaped 0.3- to 0.9-meter diameter rocks. The riprap is approximately 6 meters wide and is moderately sloped to the river.	Underground radioactive material	Riprap acts as BMP to decrease run-off velocity and to stabilize slope. No action required.
100 B/C Area Figure A-1, Sheet 2	B	2	Storm water run-off could flow over riprap to within meters of the river. The riprap is in the area of the 116-B-8 Outfall, which has been demolished and covered with dirt. On the terrace above the riprap is a 9 by 9 meter roped-off area that is posted "Contamination Area". The riprap consists of irregularly shaped 0.3- to 0.9-meter diameter rocks. The riprap and extensions of the bank created several channels that come together half way down the bank to form a single riprap channel approximately 12 meters wide that leads to the river.	Surface radioactive material	This outfall has been demolished and covered with dirt. There is no access to the river. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 B/C Area Figure A-1, Sheet 3	C	3	At the top of the gently-to-moderately sloped bank, above the flume, is the concrete outfall structure. This area, labeled on selected maps as the "116-B-7 Outfall", is fenced and posted as "Contamination Area". This site is identified in the Quarterly Environmental Radiological Survey Summary (WHC-SP-0665-11). The configuration of the outfall structure is such that storm water coming in contact with the interior of the structure would not overflow to the bank and reach the river.	Surface radioactive material	There is no pathway for the surface contamination to reach the river. No action required.
100 B/C Area Figure A-1, Sheet 3	E	5	Storm water run-off would come in contact with 181B Building and surrounding materials. The north side of the building is in direct contact with the river. A gravel/asphalt parking lot is located on the south side. Storm water run-off from the parking lot could drain towards the river through a hole in a concrete retaining wall that extends from the east side of 181B Building. Storm water run-off from the road and gravel areas southwest of 181B Building could drain towards the river down the West side of 181B Building. The banks are steeply sloped with large rocks and natural vegetation. Transformers located to the southeast of 181B Building have secondary containment that drained to the former inlet screen backwash trench. This drain line was sealed in August 1996.	None identified	No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 D Area Figure A-4, Sheet 2	A	1	A concrete flume, which is labeled on selected maps as "116-DR-5," extends from the bank into the river. The flume is surrounded by natural vegetation and river rock. The concrete walls would channel storm water flow into the river. The river bank is moderately sloped. The area up-slope of the flume is posted as "Underground Radioactive Material". Due to high water, the flume was underwater during the inspection. The flume will be inspected later in the year.	Underground radioactive material	The area posted as containing underground radioactive material is stabilized. No action required.
100 D Area Figure A-4, Sheet 2	B	2	A concrete flume, which is labeled on selected maps as "116-D-5" outfall, formerly called 1904-D, extends from the bank into the river. The concrete walls could channel storm water flow into the river. At the river's edge, concrete has been crudely poured into the flume in an apparent attempt to cover the flume and block the flow. The flume is surrounded by natural vegetation and river rock. The river bank is moderately sloped. The portion of the flume up slope of the river bank has been backfilled and is covered with vegetation. This area is posted as "Underground Radioactive Material Area". The portion of the outfall structure on the terrace above the flume is posted as a "Contamination Area". Because of high water, the flume was underwater during the inspection. The flume will be inspected later in the year.	Surface and underground radioactive material	There is no pathway for the contamination to reach the river. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 D Area Figure A-4, Sheet 3	C	3	Storm water run-off might come in contact with 181-D Building and surrounding materials. The north side of the building is in direct contact with the river. A gravel parking lot and electrical transformers are located on the south side of the building. Two large transformers, classified as "PCB Contaminated" (50-499 parts per million PCBs), are provided with secondary containment. Four smaller non-PCB transformers do not have secondary containment but because of their location and condition would not be expected to be a pollutant source.	None identified	No action required.
100 F Area Figure A-6, Sheet 3	B	4	The 118-F-5 Area is located 154 meters from a drainage channel to the river. The area appears as a flattened burial mound and is covered with gravel. Buried waste at this site is covered by approximately 4.5 meters of clean material and posted as "Underground Radioactive Material".	Underground radioactive material	Underground radioactive material stabilized with gravel. No action required.
100 F Area Figure A-6, Sheet 4	C	5	Located outside the NE corner of 107-F is an area covered with gravel that slopes gently toward the river. Some of the graveled area is posted as "Underground Radioactive Material".	Underground radioactive material	Underground radioactive material stabilized with gravel. No action required.
100 F Area Figure A-6, Sheet 4	C	6	The gravel lot has been built up over an area identified on some maps as the "Animal Waste Leaching Trench". The area is posted as "Underground Radioactive Material".	Underground radioactive material	Underground radioactive material stabilized with gravel. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 F Area Figure A-6, Sheet 4	F	9	A concrete flume extended from the riverbank into the river. The concrete walls could channel storm water run-off flow. The flume is surrounded by river rock and the riverbed. According to maps, the flume was previously a discharge point for cooling water from 107-F. The outfall is labeled 116-F-8 and is deactivated. Up-slope of the outfall is an area posted as "Underground Radioactive Material". Because of high water, the flume was under water. The flume will be inspected later in the year.	Underground radioactive material	Underground radioactive material has been stabilized. No action required.
100 F Area Figure A-6, Sheet 4	G	11	A concrete flume extends from the riverbank into the river. The concrete walls could channel storm water run-off flow. The flume, which is labeled as the "PNNL Outfall" on some site maps, is surrounded by river rock and riverbed. Up-slope of the outfall is an area posted as "Underground Radioactive Material". Because of high water, the flume was under water. The flume will be inspected later in the year.	Underground radioactive material	Underground radioactive material has been stabilized. No action required.
100 F Area Figure A-6, Sheet 6	J	15	Storm water run-off drains to the river via a paved boat ramp, which is adjacent to the WBF-1 and WBF-2 Buildings. The area is moderately sloped and consists of parking and roadways that are gravel. This outfall results from non-industrial sources. Building vacated in FY 1996. Outfall was not inspected.	None identified	No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 H Area Figure A-5, Sheet 2	C	3	An open 12-inch diameter pipe is embedded in a concrete square located at the top of the river bank. It has been identified as a culvert draining the upland side of the adjacent road. The upper portion of the bank is steeply sloped and has a natural ravine that extends from the head of the pipe. The lower portion is moderately sloped toward the river. The area is covered with river rock and natural vegetation.	None identified	No action required.
100 H Area Figure A-5, Sheet 2	D	4	Storm water run-off could flow over the remnants of the demolished 116-H-5 overflow flume. The remnants include concrete steps and large concrete blocks. Additional rock has been placed as riprap on the slope. The bank is moderately sloped until the steep wall of the large concrete blocks. Below the concrete blocks, the bank is relatively flat. The area on the terrace above the river is posted as "Underground Radioactive Material".	Sediments; underground radioactive material	Riprap acts as BMP to decrease run-off velocity and stabilize slope. No action required.
100 H Area Figure A-5, Sheet 2	E	5	Storm water run-off could flow over the riprap to within feet of the river. According to the maps, the riprap was probably placed over the remnants of the demolished 116-H-5. The riprap is moderately sloped with virtually no vegetation. The area on the terrace above the river is posted as "Underground Radioactive Material".	Sediments, underground radioactive material	Riprap acts as BMP to decrease run-off velocity and stabilize slope. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 H Area Figure A-5, Sheet 3	F	6	A 13-inch diameter 'closed' corrugated pipe is embedded in a square concrete block located at the top of the river bank. The end of the pipe has a piece of sheet metal covering the majority of the opening. It has been identified as a culvert draining the upland side of the adjacent road. The bank below is moderately sloped with natural vegetation.	None identified	No action required.
100 H Area Figure A-5, Sheet 3	G	7	Storm water run-off could flow from a gravel roadway and terrace area through an erosion area that surrounds a concrete headwall on the river bank, draining the upland side of the adjacent road. Erosion begins within feet of the gravel roadway and has removed rock and soil behind the concrete headwall. Near the roadway the bank is steeply sloped. Below the headwall the bank is moderately sloped to the river. The bank is covered with natural vegetation.	Sediments	Natural vegetation and gravel on bank acts as BMP to decrease run-off velocity and stabilize slope. No action required.
100 H Area Figure A-5, Sheet 3	H	8	A 13-inch diameter 'closed' corrugated pipe is embedded in a square concrete block located near the top of the river bank. The end of the pipe has a piece of sheet metal covering the majority of the opening. It has been identified as a culvert draining the upland side of the adjacent road. The bank below is moderately sloped with natural vegetation.	None identified	No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 H Area Figure A-5, Sheet 3	I	9	A 6-inch diameter pipe of unknown origin extends horizontally out of the river bank. The discharge point is approximately 3 meters below the top of the bank. The pipe does not appear to be supported and is not covered or capped. It is believed to be an old storm water culvert from construction days. The bank is moderately sloped with natural vegetation.	None identified	No action required.
100 H Area Figure A-5, Sheet 3	J	10	An 18-inch diameter corrugated pipe of unknown origin (speculated to be a storm water drain) extends horizontally out of the river bank. The discharge point is near the top of the bank and approximately 40 meters from the river. The pipe does not appear to be supported and is not covered or capped. The upper portion of the bank is moderately sloped and is covered with river rock and dirt. The lower portion of the bank is gently sloped with natural vegetation.	Sediments	Natural vegetation on bank acts as BMP to decrease run-off velocity and stabilize slope. No action required.
100 K Area Figure A-2, Sheet 2	A	1	A 16-inch culvert is present west of 100-K perimeter access road and east of 107-KE access road. Outfall is the floodplain just north of the perimeter access road. Areas potentially drained from this culvert are posted as radiological "Underground Radioactive Material". No source of run-off other than from precipitation is expected.	Underground radioactive material	Outfall is approximately 320 meters from the river and not a storm water discharge to the river. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 K Area Figure A-2, Sheet 2	A	2	A 16- inch culvert is present south of 100-K perimeter access road around the 107-KE retention basins. Outfall is the floodplain just north of perimeter access road. Areas potentially drained from this culvert are posted as "Contamination Areas". No source of run-off other than from precipitation is expected.	Surface radioactive material	Outfall is approximately 200 meters from the river and is not a storm water discharge to the river. No action required.
100 K Area Figure A-2, Sheet 2	B	3	An eroded trench located immediately north and east of the 1908-K outfall structure. Erosion is due to overflow during maximum water usage when the 100-K reactors were running. Because the reactors are no longer running, the overflow trench is no longer in use. Posted as "Underground Radioactive Material". Point source conveyance B-3 and E-9 are located within the floodplain between 181-KW and 181-KE structures. This entire area down to just above the river is posted as a "Soil Contamination Area" or "Underground Contamination". The river back along this area will be added to future inspections. The area along the river could not be inspected due to high water levels. Area will be inspected later in the year.	Radioactive contaminated soil	There is no discharge to the trench. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 K Area Figure A-2, Sheet 3	E	9	Two 16-inch culverts are present that could drain the area south of 100-K perimeter access road around the 107-KW retention basins. The outfall is the floodplain just north of perimeter access road. Areas potentially drained from this culvert are posted as "Underground Radioactive Material". No source of run-off other than from precipitation is expected. Point source conveyance B-3 and E-9 are located within the floodplain between 181-KW and 181-KE structures. This entire area down to just above the river is posted as a "Soil Contamination Area or Underground Radioactive Material". The river back along this area will be added to future inspections. The area along the river could not be inspected because of high water levels. Location will be inspected later in the year.	Radioactive contaminated soil	150 meters from the river. No action required.
100 K Area Figure A-2, Sheet 3	F	10	A 16-inch culvert is present that could drain the area south of 100-K perimeter access road just east of 181-KW access road. The outfall is the floodplain just north of perimeter access road. Areas potentially drained from this culvert are not in contamination areas, although the outfall is in a soil contamination area.	Radioactive contaminated soil	Outfall is approximately 160 meters from the river. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 K Area Figure A-2, Sheet 3	F	12	A 1.21-meter by 1.21-meter by 1.83-meter basin is present in the deck of 181-KW pump house. A 24-inch pipe extends east to the embankment and out to the river. Asbestos-wrapped pipes are present on the deck. The basin is not permitted like its 181-KE counterpart and is not capped. Run-off from 108-KW pump house surfaces is expected to outfall directly to the river.	Asbestos-wrapped pipes	Asbestos abatement (encapsulation of the piping) is completed at this location. No source of contaminants. No action required.
100 K Area Outfall 004 (New outfall added per J. Hunacek of DESI)			Storm water is collected by underground piping and discharged at the 004 outfall. This outfall is a pair of 84-inch diameter pipes that extend 412 meters from the discharge building to beneath the surface of the river, near the center. Only one of the outfalls pipes is operational. This outfall, which is covered in riprap, is continuously monitored for flow. Samples for this outfall are drawn from the outfall facility and analyzed for radionuclides monthly.	All discharges are non-radioactive but due to past reactor operations, the steel pipelines became contaminated with low-level radionuclides.	Outfall 004 is sampled/analyzed monthly and results are published in the yearly release report.
100 N Area Figure A-3, Sheet 3	D	8	Erosion point in terrace that drains from the terrace above the riverbank. Drains to E-9. Potential drainage from adjacent gravel area and asphalt area surrounding 107 N via local gutters. Concrete storm water gutters repaired. Curbing added to the concrete storm water gutter to eliminate water overflow and subsequent erosion of the slope.	Sediments	Gutters will be cleaned out as necessary to prevent blockage.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 N Area Figure A-3, Sheet 3	E	9	Major erosion point in terrace that drains to riverbank. Potential drainage from adjacent gravel and asphalt areas surrounding 107N via local gutters. Concrete storm water gutters repaired. Curbing was added to the concrete storm water gutter to eliminate water overflow and subsequent erosion of the slope. The erosion point downslope of gutter was backfilled.	Sediments	Gutters will be cleaned out as necessary to prevent blockage.
100 N Area Figure A-3, Sheet 3	E	10	Erosion point in terrace that drains to riverbank. Potential drainage from adjacent gravel area and asphalt area surrounding 107N via local gutters. Curbing was added to the concrete storm water gutter to eliminate water overflow and subsequent erosion of the slope. However, dirt was placed around the 1304 Emergency Dump tank to facilitate completion of an asbestos abatement project. The dirt mound slopes down to the concrete storm water gutter and could be a sediment pollutant source. The dirt will be stabilized during the abatement project and removed after the project is completed.	Sediments	The gutters will be cleaned out as necessary to prevent blockage.
100 N Area Figure A-3, Sheet 3	G	14	Flume for outfall from 1908-N diversion system to river. Status: Use of outfall 008 has been discontinued and is no longer permitted under NPDES. Curbing was added to the concrete storm water gutter, which is upslope of 008 flume, to eliminate water overflow and subsequent erosion of the slope.	Sediments	Upslope gutters will be cleaned out as necessary to prevent blockage and overflow.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
100 N Area Figure A-3, Sheet 4	I	19	12-inch culvert: deactivated raw water system drain pipe.	None identified	No action required. The point source conveyance will be removed from future inspections as there is no storm water source.
100 N Area (new discharge added per J. Woolard)			Flume for outfall 005. Source of discharge, over flow from 182-N water storage tank and steam condensate, has been eliminated. Storm water could flow into the flume.	Sediments	No action required. Concrete headwall keeps sediment from entering the flume.
100 N Area (new discharge added per J. Woolard)			Pipe to outfall 007. A basin is located in the deck of the 181-N pump house. A pipe extends out to the river. Source of discharge, backwash of the river pump inlet fish screens, has been eliminated. Storm water could flow into the basin and out the pipe to the river.	None identified	No action required.
100 N Area (new discharge added per J. Woolard)			Pipe to outfall 009. Source of discharge including raw river water, discharge from heating, ventilation, and air conditioning equipment, air compressor cooling water and storm water from roof drains located at 105N, 109N, and 184N Buildings were eliminated. Opening to pipe is located in a large concrete structure that starts abovegrade and could receive storm water.	None identified	No action required. The concrete structure encasing the pipe prevents storm water run-on from surrounding areas.
100 N Area Figure A-3, Sheet 4	I	20	4-inch iron pipe. Status: Active. Discharges storm water to rip-rap at top of river bank. Source is from noncontaminated terrace above. Pipe is under riprap.	Sediments	No action required as the pipe is covered with gravel and no erosion is evident.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
300 Area Figure A-7, Sheet 2	A	1	An underground pipe drains storm water from the roadway area between the north side of 331-C Building and the south side of 331 Building to an open trench that runs east to west between 331-D and 331-E Buildings. The open trench is piped to a culvert passing beneath a gravel roadway and the perimeter fence. The discharge is approximately 35 meters from the river. The bank is moderately sloped with natural vegetation. This outfall results from non-industrial sources.	None identified	No direct discharge. No action required.
300 Area Figure A-7, Sheet 2	B	2	Located southeast of 331 Building, a 15-inch diameter pipe in a drainage ditch allows run-off from the paved parking area, which has a large gravel border, to drain to the river. The bank is moderately sloped with natural vegetation. This outfall results from non-industrial sources. The outfall is approximately 78 meters from the river bank.	None identified	No direct discharge. No action required.
300 Area Figure A-7, Sheet 2	D	4	Storm water from the paved parking area located northeast of 331 Building flows out a channeled opening in the concrete curb and a 12-inch pipe into a ditch, draining under a graveled road in a 15-inch pipe to another ditch with a 12-inch pipe heading toward the river. The outfall is approximately 80 meters from the river. The area is gently sloped with natural vegetation. This outfall results from non-industrial sources.	None identified	No direct discharge. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
300 Area Figure A-7, Sheet 3	E	5	Parking lot was installed in 1994 with grass planted between the parking area and the river to reduce run-off.	None identified	Periodic visual inspections are performed to assess run-off. No action required.
300 Area Figure A-7, Sheet 3	F	6	A sump that received the 309 Process sewer discharge has been abandoned in-place. Run-off will not enter this sump because of a raised concrete slab. When the parking lot was constructed in 1994, grass was planted between the parking lot and the river to reduce run-off.	None identified	No action required.
300 Area Figure A-7, Sheet 3	G	7	Storm water run-off could flow from an area at the eastern end of Locust Street over a dirt road that slopes gently towards the river. The road provides access to the river and the 312 intake structure. Lower portions of the bank are gently sloped and covered with natural vegetation.	None identified	Periodic visual inspections are followed to assess run-off. No action required.
300 Area Figure A-7, Sheet 3	H	8	A steeply sloped bank east of the 315 Building has significant erosion. There are four distinct erosional areas in which storm water flows towards the river. High river levels in 1997 thinned the natural vegetation on the lower portion of the bank. There is a partial retaining wall along the river. In September 1996, rocks were placed along the perimeter fence to reduce the velocity of the run-off down the bank, and as a result, reduce erosion.	Sediments	Periodic visual inspections are performed to assess run-off. No action required.

SWPPP Map reference number	General discharge location to river	Potential point source conveyance	Description/current status	Potential storm water pollutant sources	Best management practice(s)
300 Area (New discharge added Per M. Gunter Comments)			Storm water run-off from the 337 Building east parking lot could enter a maintenance cover that discharges into an open culvert, which runs the entire length of the bank and into the river.	Oil	Evaluate alternatives for eliminating the potential discharge to the river.
300 Area Figure A-7, Sheet 3	I	9	Storm water run-off from the area around 3769 and 3770 Buildings and the adjacent roadway could flow eastward through a natural ravine that slopes gently toward the river. Railroad ties are placed end-to-end adjacent to the roadway to reduce the run-off and erosion from this area. The ravine is covered with rock and dirt as well as natural vegetation.	Sediments	Periodic visual inspections are performed to assess run-off. No action required.

APPENDIX C

HANFORD SITE LIST OF SIGNIFICANT SPILLS AND LEAKS

100-B/C, D, F, H, K, N and 300 AREAS

Report Period: July 1, 1997 to June 30, 1998*

* - Recorded below are all significant spills and significant leaks of toxic or hazardous pollutants that have occurred during the reporting period.

Definitions: Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.

Date (month/day/yr)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, if known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (T/F)	
None Reported										

This page intentionally left blank.

DISTRIBUTION

	MSIN
U.S. Department of Energy, Richland Operations Office	
S. E. Clarke	A5-15
Bechtel Hanford, Inc.	
R. J. Landon	H0-02
J. G. Woolard	H0-02
Duke Engineering & Services, Inc.	
G. S. Hunacek, Jr.	X3-79
D. J. Watson	X3-79
DynCorp	
B.J. Dixon	G3-26
Fluor Daniel Hanford, Inc.	
J. J. Kapadia	H6-23
C. P. Strand	H6-23
K. J. Svoboda	N1-26
Lockheed Martin Services, Inc.	
Central Files	B1-07
DPC	H6-08
Pacific Northwest National Laboratory	
B. P. Atencio	P7-68
Waste Management Federal Services Hanford, Inc.	
E. M. Greager	H6-35
R. D. Haggard	H6-25
J. J. Luke	H6-25

This page intentionally left blank.