DOE/RL-94-96

Rev. 2

UC-630

Hanford Site Pollution Prevention Plan Progress Report - 1995

Date Published

September 1996

United States
Department of Energy

P.O. Box 550
Richland, Washington 99352

Approved for Public Release

This page intentionally left blank.

INFORMATION RELEASE REQUEST
PUBLIC DOCUMENT CHANGE/REVISION
 (Short Form No. 1)

1. Base Document ID Number: D0E/RL-94-96

2. Base Document Title:

Hanford Site Pollution Prevention Plan Progress Report, 1993

3. Change/Revision Number: Rev. 2

4. Change/Revision Date: 08/30/96

5. Unclassified Category: * UC - 630

6. Budget & Reporting Code: * B&R - EW3110022

I verify this change/revision to the base document indicated above:

- Complies with the provisions of WHC-CM-3-4
- Contains no Limited-Use information
- Contains no classified or Applied Technology references
- Does not change the intent or meaning of the base document
- And, the base document itself is approved for public release.

7. Responsible Manager: J. R. Kirkendall

MSIN: B3-28

Telephone Number: 376-1577

J. S. Mery
 (Signature)

8/26/96
 (Date)

8. Information Release Administration Specialist: **

Chris Hillenbrand
 (Signature)

8-26-96
 (Date)

*Required only for full revisions transmitted to OSTI.

**Required only for full revisions.

THIS DOCUMENT IS UNCLASSIFIED
DATE 01-11-2001 BY 60322 UCBAW

FOREWORD

This report tracks progress made during 1995 against the goals stated in DOE/RL-92-62, *Executive Summary, Hanford Site Pollution Prevention Plan*.¹ The Executive Summary of the plan was submitted to the Washington State Department of Ecology (Ecology) in September 1992. The plan, Executive Summary, and the progress reports are elements of a pollution prevention planning program that is required by WAC 173-307, "Plans,"² for all hazardous substance users and/or all hazardous waste generators regulated by Ecology. These regulations implement RCW 70.95C, "Waste Reduction,"³ an act relating to hazardous waste reduction. The act encourages voluntary efforts to redesign industrial processes to help reduce or eliminate hazardous substances and hazardous waste byproducts, and to maximize the in-process reuse or reclamation of valuable spent material.

In accordance with WAC 173-307, Hanford prepared a Pollution Prevention Plan and has submitted annual progress reports on a voluntary basis, as Hanford is a Treatment, Storage and Disposal facility. The basis of the plan and progress report is to track progress for reductions in hazardous substance use and hazardous waste generated.

A new Pollution Prevention Plan was scheduled to be prepared in FY97 and annual reports thereafter on a voluntary basis. The Hanford Site is recommending streamlining their planning and reporting efforts by eliminating the WAC-173-307 Plan and subsequent reports as these are met through other mechanisms. The three primary reasons are: 1) Significant progress toward the goals set in the 1992 Pollution Prevention Plan required by the WAC 173-307 is being achieved, 2) Renewed emphasis through newly established Secretary of Energy waste reduction goals, and 3) Progress reporting is provided through other means [DOE Annual Report on Waste Generation and Waste Minimization Progress and the Biennial Waste Minimization Report (now through the Waste Minimization input to the Dangerous Waste Report)].

On May 3, 1996, the Secretary of Energy issued waste reduction goals that include hazardous (including State and Toxic Substance Control Act waste) and Emergency Planning Community Right-To-Know Act (EPCRA) releases to be met by 1999. The applicable goals are:

For Routine Operations:

- ▶ Reduce the generation of hazardous waste 50%
- ▶ Reduce total releases and off-site transfers for treatment and disposal of EPCRA 313 toxic chemicals 50%

¹DOE-RL, 1992a, *Executive Summary, Hanford Site Pollution Prevention Plan*, DOE/RL-92-62, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

²WAC 173-307, "Plans," *Washington Administrative Code*, as amended.

³RCW 70.95C, "Waste Reduction," *Revised Code of Washington*, as amended.

The Waste Minimization input to the 1995 Dangerous Waste Report was provided to WHC Solid Waste on January 23, 1996 for the 1995 Dangerous Waste Report preparation. The 1995 DOE Annual Waste Generation and Waste Minimization Report will be issued on September 30, 1996.

This 1995 WAC-173-307 Progress Report will be the last update to the 1992 Hanford Pollution Prevention Plan and the intent of the WAC code is being met through efforts to meet the Secretary of Energy's goals and through the other existing reporting mechanisms; therefore, eliminating an unnecessary duplication of effort. This streamlined approach was discussed and agreed to by the Kennewick Ecology office.

The Hanford Site opportunity assessment process meets the requirements of the pollution prevention planning program. The opportunity assessments are organized by physical facility or contractor organization. Each waste-generating facility/organization performs opportunity assessments to identify, screen, and analyze waste reduction options. Each completed opportunity assessment can identify any number of reduction opportunities. This progress report is to track action taken on reduction opportunities in relationship to achieving the goals stated in the Pollution Prevention Plan. In 1995, the next phase of the process began with the introduction of Hanford site-strategic opportunity assessments for multi-contractor, multi-facilities, or largest waste generating sources. The first two site-strategic assessments for hazardous waste were completed in late 1995, and are included in Section C.

The Executive Summary of the Pollution Prevention Plan combined all similar opportunities and consolidated them into a table (Executive Summary/Table 3). This progress report identifies the individual opportunities and updates and provides a status of each opportunity assessment and any opportunity assessments conducted since the Executive Summary was issued.

Section A discusses progress toward goals. Section B updates the reduction/recycle/treatment opportunities on the opportunity assessments identified in the 1992 Pollution Prevention Plan¹ and the 1994 Progress Report.² Listed are all opportunities that were implemented, rejected/canceled, or superseded during the reporting period. Section C identifies new opportunity assessments that have been conducted and provides a status of all open opportunity assessments. Section D discusses production levels, problems encountered, and estimation techniques.

In most cases, post-implementation tracking did not occur, and actual reduction amounts are not available. Also, estimated reduction amounts were not always provided on the opportunity assessments conducted in previous years; therefore, reduction quantities cannot always be listed on Worksheet 4. Annual reduction amounts reflect actual or estimated reduction quantities for a 12-month duration, regardless of the time of year the opportunity was implemented.

At the Hanford Site, not all hazardous waste generation and hazardous substance use reduction results from a formal opportunity assessment process. Numerous reductions arise from ideas generated by

¹DOE-RL, 1992b, *Hanford Site Pollution Prevention Plan*, RL-PPP-92-1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

²RL, 1994, *Hanford Site Pollution Prevention Plan Progress Report - 1994*, DOE/RL-94-96, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

individuals closely tied to the hazardous waste-generating activity and to the hazardous substance procurement process. Table 1 lists opportunities that were implemented in 1995, that in most cases were not the result of formal assessments identified in the 1992 Pollution Prevention Plan, or 1993 and 1994 Progress Reports.

Table 1. Summary of 1995 Waste Minimization Opportunities.

Hazardous waste stream/form	Process/method	Weight (kg)	Weight (lb)
Batteries/S	Recycled/R	24,292.8	53,555.9
Unused carbon tetrachloride/L	Procedure change/SR	15,500.0	34,171.3
Unused dilute sulfuric acid/L	Excessed/SR	128.0	282.2
Unused chemicals/L&S&G	Excessed/SR	2,981.0	6,571.9
Unused potassium hydroxide	Excessed/R	940.0	2,072.3
Spent Solvent/S	Recycled/R	1,599.0	3,525.2
Film negatives/S	Recycled/R	9.1	20.1
Used oil/L&S	Recycled/R	7,682.0	16,935.7
Toxic waste drums/S	Recycled/R	125.0	275.6
Unused ferric nitrate/S	Excessed/R	897.0	1,977.5
Unused mercury/S	Excessed/R	2.3	5.1
Fire extinguishers/S	Excessed/R	631.0	1,391.1
Fire foam/L	Excessed/R	1,535.0	3,384.1
Unused potassium permanganate/S	Excessed/R	921.0	2,030.4
Buffer solution/L	Recycled/R	32.0	70.5
Lead/S	Recycled/R	29,671.0	65,412.7
Unused sodium hydroxide/L	Excessed/R	63,690.0	140,411.0
Hazardous materials/L&S	Recycled/SR	3,200.0	7,054.7
Paint related waste/L&S	Material substitution/SR	924.0	2,037.1
Asbestos/S	Process change/TT	N/A	N/A
Concrete/S	Process change/TT	N/A	N/A
Printer toner/L	Process change/SR	60.0	132.3
Tank waste simulant/L	Process change/SR	8,814.0	19,431.3
Sulfuric acid/L	Excessed/R	522.0	1,150.8
Cetane 2000/L	Excessed/SR	44.3	97.7
Ethylene glycol/L	Excessed/R	19,420.0	42,813.3
Diesel fuel/L	Recycled/R	273.0	601.9
Petroleum residue/S	Recycled/R	6,600.0	14,550.4
Ammonium sulfate/L	Process change/SR	11,440.0	25,220.6
Hydraulic fluid/L	Process change/R	1,337.0	2,947.6
DOP Ballasts/S	Recycled/R	200.0	440.9
Paint/L	Excessed/SR	377.0	831.1
Antifreeze/L	Recycled/R	3,123.0	6,885.0
Shop rags/S	Recycled/R	1,960.0	4,321.0
Freon/L	Recycled/R	33.0	72.8
Asbestos laden equipment/S	Recycled/R	7.8	17.2
Mobiltherm/L	Recycled/R	6,909.0	15,231.6
Fuel oil/L	Recycled/R	403.0	888.5
AFFF fire suppressant/L	Process change/TT	6,545.4	14,430.0
Lubricating oil/L	Excessed/R	1,739.0	3,833.8
GRAND TOTAL:		224,567.7	495,082.0
(SR)/SOURCE REDUCTION TOTAL:		43,468.3	95,830.2
(R)/RECYCLING TOTAL:		174,554.0	384,821.8
(TT)/TREATMENT TOTAL:		6,545.4	14,430.0

G = Gas
L = Liquid
N/A = Not available
S = Solid

TABLE OF CONTENTS

SECTION A: PROGRESS TOWARD GOALS	A-1
SECTION B: IMPLEMENTED OPPORTUNITIES	B-1
SECTION C: NEWLY IDENTIFIED OPPORTUNITIES	C-1
SECTION D: PRODUCTION LEVELS, PROBLEMS, AND ESTIMATION TECHNIQUES . .	D-1
SECTION E: REFERENCES AND BIBLIOGRAPHY	E-1

This page intentionally left blank.

SECTION A
PROGRESS TOWARD GOALS

This page intentionally left blank.

Worksheet 1
Facility Identification, Progress Toward Goals

Facility Name: Hanford Site

State/EPA Identification number(s): WA78900008967

Reporting Year(s): January 1, 1995 - December 31, 1995

Progress Toward Goals - 080(1)(a)

If you established numeric goals in your plan, you need to discuss your progress towards meeting those goals. First, write the original goals established in your plan in the table below to help put the discussion into context. If numeric goals have not been established, leave the table blank. The Washington State Department of Ecology is most interested in your progress towards the goals established for the 5-year life of your plan. You might include an estimated percentage of each goal that has been achieved through this reporting year.

Hazardous substance use reduction	Goal: 25% (b91)	Hazardous waste reduction	Goal: 30% through 1995 (b91) 15% through 9/93	Achievement: 57%	Achievement: N/A	Achievement: N/A
Hazardous waste to be recycled	Goal: No goal set	Hazardous waste to be treated	Goal: No goal set	Achievement: N/A	Achievement: N/A	Achievement: N/A

The following data are from the Hazardous Material Inventory Database (HMID2) that shows the annual usage of hazardous substances (1991 is used as the baseline):

1991 74,456 kg (164,149 lb) (adjusted data)
1993 58,676 kg (126,360 lb) (adjusted data)
1994 55,656 kg (122,656 lb) (adjusted data).
1995 65,512 kg (144,430 lb) (adjusted data).

In 1994, the 25% hazardous substance usage reduction goal was achieved. This year, total usage from the base year 1991 shows a decrease of 12% based on a total 1995 hazardous substance usage of 213,000 pounds obtained from the HMID2 system.

Several major new factors contributed to this increased usage or appearance of increased usage based on better tracking methods. The HMID2 system was changed to include new toxic chemicals (primarily pesticides and herbicides) which added 31,800 pounds to the report. New work scope changes for 'one-time' activities added 17,330 pounds. These activities include start-up of the 200 Area Effluent Treatment Facility, and the replacement of heat exchange fluid in a Fuels and Material Examination Facility system. An increase of 1,000 pounds of ammonia was identified from the tank farm waste tanks which was due to a better knowledge of the nature of waste tank emissions. And finally, there was an increase of 8,440 pounds in small-use chemicals that would not have been included in the 1994 totals. By normalizing the 1995 baseline to adjust for the newly reported items, the total usage was reduced from

*Measured weights are only for the chemical constituent, not the weight of the entire product(s) used.

213,000 lb to 144,430 lb or by 68,570 lb (new toxic chemicals - 31,800 lb, one-time activities - 17,330 lb, ammonia usage reporting - 11,000 lb, and new small-use chemicals - 8,440 lb).

The 1995 net increase of 21,700 pounds over 1994 usage is primarily attributed to increased clean-up activities, better information about the use of gasoline for non-exempt activities, a major increase in weld rod use in construction projects, and more comprehensive input from construction organizations.

Hazardous waste reduction measurement is based on hazardous waste generation data. The following data are taken from the Solid Waste Information Tracking System (SWITS) database. The following figures represent annual non-decontamination and decommissioning hazardous waste generation for the Hanford Site based on shipment date of the waste (1990 is used as the baseline):

1990	658,200 kg (1,448,040 lb)
1993	339,800 kg (747,560 lb) (corrected data)
1994	294,300 kg (648,828 lb).
1995	285,973 kg (630,456 lb).

This is a 57% reduction in hazardous waste generation since 1991.

No goals were established in the plan for recycling or treatment of hazardous wastes.

If you have revised your goals or have newly established goals, display them in the table below.

Hazardous substance use reduction	Hazardous waste reduction	Hazardous waste to be recycled	Hazardous waste to be treated
New Goal:	New Goal:	New Goal:	New Goal:

Discuss your progress towards meeting these revised or newly established goals. If numeric goals have not been established, please discuss your progress toward setting them.

Discussion: The 1994 Progress Report (RL 1994) reported that the new goal to totally eliminate procurement of Class I ozone-depleting substances will be met by the end of calendar year 1995. This goal was met. No purchases were made of products containing Class I ozone-depleting substances were made after December 1995. Purchases of recycled R-12 will be made as needed until refrigeration and air conditioning units can be cost effectively replaced.

If you established any non-numeric goals in your plan, e.g., establishment of employee training programs, please discuss your progress in meeting these non-numeric goals.

Discussion: N/A

SECTION B
IMPLEMENTED OPPORTUNITIES

This page intentionally left blank.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 14-1 (Status: canceled/regulatory review indicated that contents [copper wire, reference electrode, and bentonite] were not a dangerous waste)

Short name: Recycle Copper Wire

Description: Cut off the copper wire from the package containing bentonite and reference cell prior to disposal. The wire can then be sold through the Westinghouse Hanford Company (WHC) Excess Program.

Number: KEH 14-2 (Status: canceled/regulatory review indicated that contents [copper wire, reference electrode, and bentonite] were not a dangerous waste)

Short name: Remove Electrode from Bentonite Packing

Description: Remove the reference cells from the bentonite packing. The bentonite will be disposed of as non-regulated waste and their reference cell (which contains cupric sulfate) will be disposed of as dangerous waste.

Number: KEH 14-3 (Status: canceled/regulatory review indicated that contents [copper wire, reference electrode, and bentonite] were not a dangerous waste)

Short name: Re-use Bentonite

Description: Instead of sending the bentonite to a landfill for disposal, process it through the WHC Excess Program.

Worksheet 3

Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 14

Short name: Spent Cathodic Equipment

Description: Three crates of abandoned cathodic equipment was never used and has exceeded its shelf life. The reference portion of the electrode contains cupric sulfate, a toxic substance.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 17-1 (Status: implemented)

Short name: High-Pressure Water Rinse

Description: Use high-pressure water to clean out the inside of the underground gasoline and diesel fuel storage tanks to avoid use of a hazardous degreaser.

Number: KEH 17-2 (Status: implemented)

Short name: Re-Refine Rinseate Solution

Description: Send the rinseate solution to a local oil recycler so that it can be re-refined and used as new product.

Number: KEH 17-3 (Status: implemented)

Short name: Re-Refine Sludge

Description: In addition to the rinseate solution, send any sludge cleaned out from the inside of the tanks to the oil recycler for re-refining.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary for plan submitted in lieu of an Executive Summary. In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:	KEH 17
Short name:	Underground Storage Tank Removal
Description:	Hanford Site were removed and replaced with new, compliant storage tanks for About 25 underground storage tanks from various locations throughout the

gasoline and diesel fuels. Following pumping of the old tanks, a residual of about 20 to 30 gallons remained in the tanks. This residual was removed by spraying down the inside of the tanks with a degreaser/water mixture. The residual could then be more easily cleaned out of the storage tanks. The degreaser mixture was a hazardous material, which resulted in the entire rinseate being designated and disposed of as hazardous waste.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 27-1 (Status: not implemented, not cost effective)

Short name: NAP Chemical Proposal

Description: NAP Chemical, the supplier of the ammonia sulfate for the C-018 tests proposed to buy back the ammonium sulfate mixture for use as a fertilizer avoiding the disposal as a dangerous waste.

Number: KEH 27-2 (Status: implemented)

Short name: Excess Through WHC

Description: The ammonium sulfate mixture will be processed through the WHC Excess program for free give-away. Sixty-one drums of ammonium sulfate mixture was given to a local farmer.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 27

Short name: Project C-018 Ammonium Sulfate Re-use

Description: The 200 Area Effluent Treatment Facility, Project C-018, conducted chemical test runs that produced a dry solid chemical mixture of ammonium sulfate and trace concentrations of phosphate.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 30-1 (Status: implemented)

Short name: Product Inventory

Description: Identify individuals who perform janitorial services in four ICF KH construction divisions, and perform inventories of all custodial chemicals.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 30

Short name: Janitorial Waste

Description: Construction janitors operate independently of each other and are responsible for their own inventory of cleaning supplies, including the purchase of new and/or replacement products.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 34-1 (Status: implemented)

Short name: Chemical Exchange

Description: Institute a chemical exchange network to advertise the availability of the excess products to other ICF KH organizations and site contractors.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 34

Short name: Excess Chemicals

Description: ICF KH construction divisions identified about 2,000 kg of excess chemical products that were nearing their shelf life. These chemicals were destined for disposal as hazardous waste because they were no longer needed by the organizations that originally purchased them.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 37-2 (Status: implemented)

Short name: Design Specification

Description: Several improvements were included in the design stage. These include: development of a Pollution Prevention checklist for engineers; conduct awareness training for engineers; and, revise procedures.

Number: KEH 37-3 (Status: implemented)

Short name: Submittal Process

Description: Revise construction guide specifications to address construction activities prior to the start of construction. Awareness meetings with field construction engineers will be held to explain the requirements.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 37

Short name: Hazardous Waste Procurement

Description: Hazardous products are designated in design and construction without consideration for less hazardous substitutes. Some of these products are later replaced with non-hazardous substitutes when industrial hygiene or environmental personnel become aware of them at the job site or through purchase requisitions. However, substitution at this stage in a project can result in an engineering change notice incurring delays and additional costs to a project.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:	KEH 41-1 (Status: implemented)
Short name:	Use WHC Facility
Description:	Instead of opening a new radiography laboratory for film developing, ICF KH radiographers can use an existing WHC facility with an automatic radiographic film developer.
Number:	KEH 41-2 (Status: canceled)
Short name:	Out-source Radiography Developing
Description:	Out-source radiography development services to the community.
Number:	KEH 41-3 (Status: canceled)
Short name:	Relocate Radiography Laboratory
Description:	Relocate the radiography laboratory to another area and operate per current practices.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 41

Short name: Radiography Laboratory

Description: ICF KH uses radiography to verify the integrity of the completed welds as part of its nondestructive examination quality control program. The radiography film development process generates hazardous waste. An existing radiography laboratory in the 3000 Area had to be relocated as part of the decommissioning of that area.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 42-1 (Status: not implemented due to change in work scope)

Short name: Waste Water Holding/Evaporation Container

Description: Fabricate waste water holding containers to accumulate liquid effluent from fabrication shop hydro testing. Water can be left in these containers and allowed to evaporate. This water will be sampled periodically to verify that it does not contain any regulated constituents, and that it will not create any air emissions concerns.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 42

Short name: Fab Shop Liquid Effluent Containment and Treatment

Description: The ICF KH fabrication shop at 200-E Area hydro tests many of its completed components to verify integrity under operating conditions. Hydro test water was historically discharged to a drain field in the 200-E Area. Regulatory changes now require this discharge to be permitted or completely eliminated. Without the ability to discharge, no work requiring hydro testing can be performed. Modification of an existing discharge permit to include the fabrication waste stream is estimated to cost over \$71,000 (not including annual permit maintenance fees).

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 8-3 (Status: canceled work scope change)

Short name: Use a managed care system with HP seals or tags

Description: Use a managed care system with HP seals or tags on items entering zones to ensure they can be sealed and taken out of zone areas once the job is completed.

Number: PFP 8-5 (Status: implemented)

Short name: Barcode all hazardous materials

Description: Barcode all hazardous materials to keep better track and real-time inventories throughout the facilities.

Worksheet 3

Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 8

Short name: General-use products

Description: General-use products are commonly used cleaners. In addition, they include decon agents. Instrument technicians and electricians also use solvents in the cleaning of circuit boards, poppy probes, and other items. Historically, these solvents were 1,1,1 trichlorethane, and perchlorethane-based cleaners. However, the plant switched to nonflammable and non-carcinogenic citrus terpene in 1989 and 1990.

Janitorial staff uses these products to clean fixtures, walls, desks, windows, and floors throughout the facility. Rags and empty containers are generated during the use of these products.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 16-3 (Status: implemented)

Short name: Lubrication

Description: Presently, oil changes are performed on scheduled time intervals based on equipment manufacturer's recommendations. Often the basis assumes continuous operation of the equipment. Other alternatives being considered are use of oil testing, synthetic and environmentally safe oils, and the addition of filtration units to equipment to remove dirt and metal deposits.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 16

Short name: Routine maintenance

Description: Routine maintenance is the scheduled or as-needed replacement of batteries, florescent lights and ballasts, lubrication, and painting to maintain the facility.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PNL 3-1 (Status: implemented)

Short name: Super-critical Fluid Extraction

Description: Use the super-critical fluid extraction process in place of the traditional extraction process.

Number: PNL 3-2 (Status: not implemented, change in workload eliminated need)

Short name: Microwave-Assisted Extraction Process

Description: Use the Microwave-Assisted Extraction Process in place of the traditional extraction process.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PNL 3

Short name: Quantitative Extraction of Organic Chemicals for Solid Matrices

Description: Characterization of organic chemicals in solid matrices first involves the extraction of the organic component. Currently the primary process for extracting the organic chemicals from solid waste and environmental samples generates large volumes of hazardous wastes in the form of solvents.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PNL 5-1 (Status: implemented)
Short name: Install Solvent Recovery Units
Description: Install five solvent recovery units to monitor and recover solvents in five high performance liquid chromatography processes.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PNL 5
Short name: High Performance Liquid Chromatography
Description: High Performance Liquid Chromatography (HPLC) is an analytical method based on selective adsorption of separated components in a mixed solution. It is used extensively to detect and quantify compounds of interest in environmental samples. Fractionating columns in the HPLC must be flushed continuously with solvent to produce a favorable environment for the sample to analyzed. However the conditioning process results in a high generation of hazardous and mixed waste.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PUR 6-2 (Status: implemented)

Short name: Paint brush washing station

Description: A paint brush washing station is being considered for use at the facility. The station would allow brushes that had been used with non-regulated latex paint to be cleaned so that they could be reused.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PUR 6

Short name: Paint application

Description: Maintenance of paint includes paint application, which often requires a clean surface. When a clean surface is required, the area is sandblasted to remove old material and dirt. The sand used in sandblasting is reused until it is not sharp enough to cut. The brushes that are used to apply paint are used until the job is completed and then disposed of as solid hazardous waste. Other materials used in the application of paint are drop cloths, rags, thinner, masks, etc.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: TAS 1-1 (Status: implemented)

Short name: Oil/water separation

Description: Procure/install an oil/water separation system for use throughout air compressor components.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: TAS 1

Short name: Used lubricating oils

Description: Maintenance activities require air compressors and pumps to have the oil changed regularly to prevent unnecessary wear to components. The frequency of oil changes to each piece of equipment is controlled by procedure.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: TRP 17-2 (Status: implemented in BPT)
Short name: Controlled Inventories-Chemical and Material
Description: Use centralized, posted storage for chemicals going into zones to ensure a just-in-time inventory is maintained at the lowest possible threshold, while ensuring sufficient chemical are available to perform all tasks.

Number: TRP 17-10 (Status: implemented in PUR)
Short name: Alternatives to chemical decontamination and sandblasting
Description: Use a baking soda blast particulate media which is non regulated.

Number: TRP 17-11 (Status: implemented in PFP)
Short name: Alternatives to chemical decontamination and sandblasting
Description: Use non regulated products specially formulated for specific decon applications.

Number: TRP 17-12 (Status: implemented in PUR)
Short name: Alternatives to chemical decontamination and sandblasting
Description: Use a high pressure, high temperature steam to clean contaminated surfaces instead of abrading or cleaning surfaces with mechanical or chemical means.

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:

TRP 17

Short name:

Deactivation, Decontamination and Zone Reduction

Description:

As maintenance, surveillance, decontamination, housekeeping and deactivation activities are performed, wastes are generated in radiological areas. This includes support, and deactivation of facilities for transition to deactivation and decommissioning. Transition facilities participating in opportunity development include BPT, PFP, FFT, FME, and PUR.

DOE/RL-94-96
Revision 2

Worksheet 4
Quantities of Hazardous Substances and Wastes
Reduced by Each Opportunity - 0801(a)(iii)

Facility Name: Hanford

State/EPA Identification number(s): WA7890008967

Reporting Year(s): January 1 - December 31, 1995

Production Factor (from Worksheet 5): 1

Use this worksheet to show reductions and other results from implementing the opportunities listed on Worksheet 2. Report quantities in pounds, not normalized for production.

Substances/ wastes affected	Implemented reduction opportunities - 1995			Reduction quantities (in lb unless noted otherwise)
Name	Opportunity name/code	Impacted process name/code	Reduction code	
Oil/gas residue	High-pressure water rinse (KEH 17-1)	17	C	7,937
Oil/gas residue	Re-refine rinseate solution (KEH 17-2)	17	C	included in above amount
Oil/gas residue (out-of-date materials)	Re-refine sludge (KEH 17-3)	17	C	included in above amount
Ammonium sulfate	Excess through WHC KEH (27-2)	27	D	18,915
Custodial chemicals	Product inventory (KEH 30-1)	30	A	NT
Chemicals	Chemical exchange (KEH 34-1)	34	C	NT
Hazardous products	Design specification (KEH 37-2)	37	A	NT
Hazardous products	Hazardous waste procurement (KEH 37-3)	37	A	NT
Chemicals	Radiography laboratory (KEH 41-1)	41	C	NT
Cleaning solvents	Barcode all hazardous materials (PFP 8-5)	8	A	NT
Oil	Lubrication (PFP 16-3)	16	A	NT
Solvent	Super-critical fluid extraction (PNL 3-1)	3	C	99
Solvent	Install solvent recovery units (PNL 5-1)	5	C	220
Paint related waste	Paint brush washing station (PUR 6-2)	6	C	NT
Oil	Oil/water separation (TAS 1-1)	1	C	NT
Chemicals	Controlled inventories -chemical and material (TRP 17-2)	17	A	NT
Chemicals	Alternatives to chemical decontamination and sandblasting (TRP 17-10)	17	C	NT
Chemicals	Alternatives to chemical decontamination and sandblasting (TRP 17-11)	17	C	NT
Chemicals	Alternatives to chemical decontamination and sandblasting (TRP 17-12)	17	C	NT

This page intentionally left blank.

SECTION C
ACTIVE AND NEWLY IDENTIFIED OPPORTUNITIES

This page intentionally left blank.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 15-1 (Status: implementation pending funding)

Short name: Centralized Inventory

Description: Conduct a complete inventory of paint supplies at each paint shop. These inventories can be consolidated into a centralized database and be made available over the Hanford Local Area Network (HLAN) for access by painters at all four construction paint shops. This will allow painters to share inventory and access this database for availability of existing stock before ordering new material.

Number: KEH 15-2 (Status: implementation pending funding)

Short name: Excess Unused Paint

Description: Collect leftover paint as reusable product in two drums at each paint shop; one for oil-based paint and one for latex paint. Full drums can be excessed through the Centralized Consolidation/Recycling Center for reuse on or offsite. Paint could be used as undercoat material or for applications where color is not important.

Number: KEH 15-3 (Status: further analysis required)

Short name: Product Substitution

Description: Painters know paint products better than anybody else and have the most up-to-date information on nonhazardous product substitutions. Therefore, painters should have some input into the specifying of paint products. This can be accomplished by 1) designating a painter as a point-of-contact for engineers any time paint products are specified; 2) putting a painter on the review list for all specifications that call out paint products; 3) having painters establish and maintain an up-to-date substitution list for use by engineers; and 4) providing more training to engineers on paint products, waste management issues, and product substitution.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 15

Short name: Liquid Paint Waste

Description: ICF KH disposed of over 2,600 kg of paint-related liquids as hazardous waste in 1994. About one-third of this total was leftover paint. The primary reasons for leftover paint waste are: 1) the product exceeds its shelf life; 2) the product begins to harden or develop a skim during use because of inadequate lid replacement; and 3) paint is not completely used up and leftover paint is thrown away.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 22-1 (Status: partially implemented)

Short name: Up-front P2 Planning

Description: Have the Environmental Coordinators of each project screen all construction projects before work gets underway for pollution prevention opportunities.

Number: KEH 22-2 (Status: implementation pending funding)

Short name: Product Substitution Review

Description: Expand the pre-job safety review process of all construction procurement requisitions to include a pollution prevention product substitution review.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 22

Short name: Pre-Construction Pollution Prevention (P2)

Description: The nature of construction work makes the performance and implementation of P2OAs more difficult than at fixed facilities. Often, the P2OA process occurs too late in the construction process to have any realistic potential to result in cost savings and waste minimization. This is because construction work is dictated by very tight cost and schedule constraints, and once construction starts, it is very difficult to approve and implement scope changes. The P2OA process needs to be incorporated in the construction project well in advance of construction start-up.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:	KEH 24-1 (Status: further analysis required)
Short name:	Alternate Secondary Containers
Description:	Replace the one-gallon buckets with containers that can be covered.
Number:	KEH 24-2 (Status: further analysis required)
Short name:	Redesign Brush Wash (without fan)
Description:	with four, covered five-gallon wash system with one consisting of a single metal bin
Number:	KEH 24-3 (Status: further analysis required)
Short name:	Redesign Brush Wash (with fan)
Description:	Replace the current brush wash system with one consisting of a single metal bin with four, covered five-gallon wash containers, and modify the current ventilation system to the reduced flow requirements.
Number:	KEH 24-4 (Status: further analysis required)
Short name:	Maintenance/Administrative Changes
Description:	Perform maintenance/administrative measures to ensure that the ventilation system is operating at it's maximum efficiency.
Number:	KEH 24-5 (Status: further analysis required)
Short name:	Install Heat Shield
Description:	Install heat shielding on the sun side of the brush wash to reduce temperatures and evaporation loss.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 24

Short name: 200W Paint Shop Solvent Brush Wash

Description: Waste stream evaluation of the 200W Paint Shop solvent brush wash system and equipment.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 30-2 (Status: implementation pending funding)

Short name: Chemical Exchange

Description: Once inventories have been conducted, a chemical exchange program can be set up to ensure that materials are not ordered and stockpiled in excess of required amounts.

Number: KEH 30-3 (Status: further analysis required)

Short name: Product Substitution

Description: ICF KH Custodial Services will present the results of its product substitution effort to janitors in the construction divisions.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 30

Short name: Janitorial Waste

Description: Construction janitors operate independently of each other and are responsible for their own inventory of cleaning supplies, including the purchase of new and/or replacement products.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 37-1 (Status: further analysis required)
Short name: Designated Use of Hazardous Materials
Description: Prior to sending requisitions to the construction side of WHC Procurement, Industrial Hygiene and Environmental Services will review the requisitions for preferable substitutes.

Worksheet 3

Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 37
Short name: Hazardous Waste Procurement
Description: Hazardous products are designated in design and construction without consideration for less hazardous substitutes. Some of these products are later replaced with non-hazardous substitutes when industrial hygiene or environmental personnel become aware of them at the job site or through purchase requisitions. However, substitution at this stage in a project can result in an engineering change notice incurring delays and additional costs to a project.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 43-1 (Status: implemented in 4722C facility/second facility pending additional funding)

Short name: Latex Brush Wash Filtration System

Description: Administrative controls will be implemented to avoid the cross-contamination of brushes/tools used for latex paint with those used for oil-based paint. This will minimize chance of contaminating the latex brush wash. Brush wash will be filtered, solids collected for disposal, and water reused for brush washing.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: KEH 43

Short name: Latex Brush Wash

Description: Painters at two ICF KH paint shops use sanitary water to clean latex paint from brushes and other painting tools. The latex brush wash was historically discharged through a sink drain to an underground injection control (UIC) system at one location (2715EC), and to a sanitary septic system at another location (4722C). Regulatory requirements mandate that discharge of the latex brush wash cease to both the UIC and the septic system. The brush wash must now be accumulated in drums, sampled for potential hazardous constituents, solidified in drums, and disposed in a sanitary waste landfill.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 7-2 (Status: further analysis required)

Short name: Recycle fluid through a filtering system

Description: Recycling the solution through filters would reduce handling and transportation of containers; however, additional issues such as housekeeping and location of the recycling require evaluation. In addition, suitable micron filters and corrosion inhibitors would have to be procured to recycle the material.

Number: PFP 7-4 (Status: further analysis required)

Short name: Substitute with vegetable oil-based fluid

Description: Suitable substitutes are available. Process and Maintenance Engineering will need to assess the suitability of the fluid.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:	PFP 7
Short name:	Mechanical maintenance hydraulic systems
Description:	preventive maintenance performed on elevator and hydraulic lift systems throughout the facility. In addition, leaks or other corrective maintenance activities increase the frequency of the fluid changes and, therefore, the waste generated.

Waste absorbents contaminated with hydraulic fluids result from spill cleanup and maintenance housekeeping during fluid changes. These absorbents have historically been diatomaceous earth or universal absorbent.

Number:	PFP 7
Short name:	New/modified construction hydraulic systems
Description:	replace old systems, or are part of a new facility. These include hydraulic lifts, scissor lifts, cranes, and elevators. In addition, leaks or other corrective maintenance activities increase the frequency of the fluid changes and, therefore, the waste generated.

Waste absorbents contaminated with hydraulic fluids result from spill cleanup and maintenance housekeeping during fluid changes. These absorbents have historically been diatomaceous earth or universal absorbent.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford (MMH003C, CNM003B, CRW001A)

Reporting Year(s): January 1 - December 31, 1995

Number: FFP 12-3 (Status: implementation pending funding)

Short name: Install paint booths

Description: Install paint booths with high-efficiency particulate air filtration for onsite painting.

Worksheet 3
Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary for plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: FFP 12

Short name: Mechanical maintenance painting

Description: The mechanical maintenance painting process includes painting of pumps, supply

tans, walls, floors, valves, safety lanes, etc.

Number: FFP 12

Short name: New/modified construction painting

Description: The new/modified construction painting process includes painting of pumps, supply

tans, walls, floors, valves, safety lanes, etc.

Number: FFP 12

Short name: Construction remediation painting

Description: The new/modified construction facility painting process includes painting of pumps,

supply fans, walls, floors, valves, safety lanes, etc.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
- A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford (MMH005)

Reporting Year(s): January 1 - December 31, 1995

Number: PFP 15-4 (Status: further analysis required)

Short name: Substitute with a vegetable oil-based fluid
Description: regulated after use.
Substitute the present fluids with a vegetable oil-based fluid that is known to be non-

Worksheet 3

Processes Impacted - 080(1)(a)(iii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
- A discussion on the processes affected by your reduction opportunities.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:

Short name: Mechanical maintenance hydraulic systems

Description:

Mechanical maintenance hydraulic fluid changes occur because of routine, scheduled preventive maintenance performed on elevator and hydraulic lift systems throughout the facility. In addition, leaks or other corrective maintenance activities increase the frequency of the fluid changes and, therefore, the waste generated.

Waste absorbents contaminated with hydraulic fluids result from spill cleanup and maintenance housekeeping during fluid changes. These absorbents have historically been diatomaceous earth or universal absorbent.

The type of hydraulic fluid currently in use is an ethylene glycol-based fluid. It is considered toxic (WTO2) in Washington State.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: TRP 17-9 (Status: under consideration in several facilities)
Short name: Alternatives to chemical decontamination and sandblasting
Description: Use carbon dioxide pelletization for surface preparation.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: TRP 17
Short name: Deactivation, Decontamination and Zone Reduction
Description: As maintenance, surveillance, decontamination, housekeeping and deactivation activities are performed, wastes are generated in radiological areas. This includes activities associated with zone reduction, contamination control, maintenance support, and deactivation of facilities for transition to deactivation and decommissioning. Facilities include BPT, PFP, FFT, FME, and PUR.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

Briefly describe the reduction opportunities you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.*
- *A description of any new opportunities you have identified and selected for implementation.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: SIT 1-1 (Status: further analysis required)

Short name: Recovery, removal, and disposal of non-radioactive asbestos

Description: Purchase and install an asbestos waste conversion unit that thermochemically converts the non-radioactive asbestos waste into an asbestos-free material.

Number: SIT 1-2 (Status: further analysis required)

Short name: Vitrification

Description: Dispose of the non-radioactive asbestos waste via the vitrification facility at the Albany Research Center, Department of Interior's Bureau of Mines in Albany, Oregon.

Number: SIT 1-3 (Status: further analysis required)

Short name: Expand Abatement to perform larger jobs/tasks

Description: Coordinate up-front pre-job planning by combining the small asbestos removal jobs with a larger asbestos removal job that reduce the trips to the landfill.

Number: SIT 1-4 (Status: implementation pending funding)

Short name: High speed mobile shredder with vacuum system

Description: Purchase two shredders without a vacuum system to compact non-radioactive asbestos waste. Two vacuum systems are currently available on-site and can be used with the purchased shredders.

Number: SIT 1-5 (Status: further analysis required)

Short name: Outer rigid layer greenhouse re-use

Description: Re-use the greenhouse outer layer framework and dispose only the inner layer plastic sheeting between jobs.

Number: SIT 1-6 (Status: further analysis required)

Short name: Radioactive asbestos conversion

Description: Integrate radioactive and non-radioactive asbestos by purchasing and operating the asbestos waste conversion unit for radioactive asbestos.

Worksheet 3

Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: SIT 1

Short name: Recovery, removal and disposal of non-radioactive asbestos

Description: Non-radioactive asbestos waste disposal practice at Hanford currently consists of traditional landfill trenching. Asbestos waste, metal fasteners, and other asbestos-containing material similar to pipes and other components generated by the Hanford contractors are cut, wrapped, bagged, and deposited into the trench and back-fill of existing soils is pushed over the waste.

Worksheet 2
Opportunity Descriptions - 080(1)(i)

- Briefly describe the reduction opportunity you have implemented during the past reporting year, or reference the section and page number where the opportunities are described in your Executive Summary for plan submitted in lieu of an Executive Summary. In either case, provide the following information:
- A short name and number for each opportunity. If you did this in your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.
 - A discussion on any reduction opportunities that have changed from the original plan or prior progress reports.
 - A description of any new opportunities you have identified and selected for implementation.

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number:	SIT 3-1 (Status: further analysis required)
Short name:	Training and awareness for procurement
Description:	Develop and conduct procurement awareness training for the various contractor procurement personnel.
Number:	SIT 3-2 (Status: further analysis required)
Short name:	Implement a charge-back system
Description:	Develop and implement a site-wide charge-back system to allow the waste generator to manage the costs for handling and disposing of that waste.
Number:	SIT 3-3 (Status: further analysis required)
Short name:	Database consolidation and sharing
Description:	Research existing on-site and off-site databases for information that can be applied to the Hanford site and consolidate the information so that it is readily available.
Number:	SIT 3-4 (Status: further analysis required)
Short name:	Expand consolidation center
Description:	Expand the operations and current scope of the consolidation center to include waste generated from using hazardous/regulating chemicals.

Worksheet 3
Processes Impacted - 080(1)(a)(ii)

Briefly describe the processes affected by your reduction opportunities, or reference the section and page number where they are described in your Executive Summary (or plan submitted in lieu of an Executive Summary). In either case, provide the following information:

- *A short name and number for each process. If you did this for your plan or Executive Summary, use the same name and number. Transfer the short name and/or code number to Worksheet 4.*
- *A discussion on the processes affected by your reduction opportunities.*

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Number: SIT 3

Short name: Hazardous/regulated chemical and product procurement

Description: Review hazardous/regulated chemical and product procurement processes used by the Hanford contractors.

SECTION D
PRODUCTION LEVELS, PROBLEMS, AND
ESTIMATION TECHNIQUES

This page intentionally left blank.

Reporting Year(s): January 1 - December 31, 1995

Production Levels - 080(1)(a)(!!!!)

Your progress needs to be reported in relation to changing production levels. This is done by comparing units of production during the reporting year with units of production in the base year, as listed in your plan. You only need to report a "production factor."

The production factor is calculated by dividing the level of production in the reporting year by the level of production in the base year. This will result in a production factor greater than 1.0 if production has increased, and less than 1.0 if production decreased.

1995 Year level = N/A
Base Year level (1991) = N/A
Production Factor (this reporting year): N/A

A production factor is difficult to characterize given the current nature of work processes at the Hanford Site. The Hanford Site mission is to clean up the Hanford Site, eliminate potential risks to the public and our workers, and serve as the DOE model in environmental restoration. The majority of this work will be remedial, and hazardous waste generated under such action is excluded from the pollution prevention progress measurement under WAC 173-307, "Plans." Because the recent work at the Hanford Site does not involve manufacturing of products, no comparison of units of production can be made. If needed for this progress report, consider the production factor = 1.0.

Problems Encountered - 080(1)(b)

Clearly identify any problems encountered in the implementation process specific to selected opportunities. Some examples might be: unexpected regulatory problems, capital and/or operating costs higher than expected, equipment and necessary debugging adjustments. Include in your discussion the following items:

- Specific problems encountered in implementing selected opportunities.
- Steps taken or proposed to resolve the problems.
- Update problems identified in previous reporting periods.

Discussion: Some impediments discussed in DOE/RL-92-62, Executive Summary, Section 3.2.5, continue to impact progress in implementing WMin/P2 at the Hanford Site and some opportunity assessments. However, in many ways the Hanford Site program has taken significant strides in positioning itself for increased accomplishments. Management support has increased and programs are seeing the results of this support through increased funding from the DOE for implementation of opportunity assessments. Program development activities have taken place for sitewide and generator-specific programs which will provide necessary program elements needed to achieve WMin/P2 results. Some steps taken to improve WMin/P2 awareness include the development and implementation of improved training programs, a streamlined opportunity assessment process, an opportunity assessment database, and tools to implement P2 in design. In addition, awards and recognition programs, newspaper articles, and information exchanges onsite and offsite also have contributed to increased WMin/P2 awareness. The Hanford Site has won four of the ten National DOE P2 Awards two years in a row, being recognized in the DOE complex as best in class.

Emphasis continues on the Hazardous Materials Reduction Initiative program which ensures a review of purchase requisitions for hazardous or toxic substances and identifies lessor or nonhazardous product substitution alternatives. By controlling the quantity and type of chemicals and hazardous materials purchased through the WHC Procurement system, the amount of hazardous materials procured is reduced, thus reducing hazardous waste generation.

Most of the progress in implementing P2 opportunities has occurred in facilities where there is a strong grassroots advocacy with a supportive middle management. P2 projects continue to be developed and implemented. The greatest number of success stories relate to low cost, readily implemented opportunities. Opportunities are being advanced through more communication/cooperation among the facilities and in some cases coordination of "seed" monies. Regular meetings with the Site Pollution Prevention representatives have continued throughout the year to facilitate the communication/cooperation among the facilities.

The U.S. Department of Energy, Office of Environmental Management (EM) elevated the Waste Management Division to the Office of Pollution Prevention reporting to the Deputy Assistant Secretary of Site Operations. This move reflects the increasing priority the Department of Energy and EM places on reducing waste generation from their production, laboratory, and clean-up operations. Hanford Site waste minimization funding will be prioritized at Headquarters rather than as part of the site prioritization process, and therefore, is not part of the overall site budget cap. This action translates into additional funding for high return on investment pollution prevention projects.

Worksheet 6
Estimation Techniques, Conversions

Facility name: Hanford

Reporting Year(s): January 1 - December 31, 1995

Estimation Techniques and Assumptions - 080(1)(a)(iii) (if applicable)

If the hazardous substances or waste reduction reported on Worksheet 4 are not actual amounts, describe the technique(s) and assumptions used to estimate the weight of the materials.

Discussion: Numbers on Worksheet 1 and Table 1 are actual amounts taken from the Hanford Site tracking systems, HMD2 and SWITS.

Conversion Methodology - 080(1)(a)(iv) (if applicable)

If you have changed your measurement or estimation techniques from prior reporting periods so that reductions are not additive for the 5-year planning period, describe a methodology for converting your prior reported reductions and provide the recalculations.

Discussion: N/A

This page intentionally left blank.

SECTION E
REFERENCES AND BIBLIOGRAPHY

This page intentionally left blank.

REFERENCES

- DOE-RL, 1992a, *Executive Summary, Hanford Site Pollution Prevention Plan*, DOE/RL-92-62, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1992b, *Hanford Site Pollution Prevention Plan*, RL-PPP-92-1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, 1993, *Pollution Prevention Planning Guidance Manual for Chapter 173-307 WAC*, Publication 91-2, Washington State Department of Ecology, Olympia, Washington.
- EPA, 1993, *Lighting Upgrade Manual*, EPA-430-R-93-001, U.S. Environmental Protection Agency, Washington, D.C.
- Montreal Protocol of 1987*, "Substances that Deplete the Ozone Layer."
- RCW 70.95C, "Waste Reduction," *Revised Code of Washington*, as amended.
- Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.
- RL, 1993, *Hanford Site Pollution Prevention Plan Progress Report - 1993*, DOE/RL-94-96, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- RL, 1994, *Hanford Site Pollution Prevention Plan Progress Report - 1994*, DOE/RL-94-96, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Superfund Amendments and Reauthorization Act of 1986*, 42 USC 6921, et seq.
- Toxic Substances Control Act of 1976*, 15 USC 2601, et seq.
- WAC 173-307, "Plans," *Washington Administrative Code*, as amended.

BIBLIOGRAPHY

- Ecology, 1994, *Guidance for Reporting Progress in Pollution Prevention*, Publication 93-38, Washington State Department of Ecology, Olympia, Washington.

This page intentionally left blank.

DISTRIBUTION

Number of Copies

OFFSITE

1	<u>Washington State Department of Ecology/Central Regional Office</u> 106 South Sixth Avenue Yakima, WA 98902-3387	
	M. B. Benedict	
1	<u>Washington State Department of Ecology/Central Regional Office</u> 1314 W. 4th Avenue Kennewick, WA 99336	
	D. D. Dorsey	B5-18

ONSITE

12	<u>U.S. Department of Energy, Richland Operations Office</u>	
	M. A. Barnard (e)	K8-50
	S. D. Bradley (e)	S7-51
	D. H. Chapin (e)	R3-79
	M. S. Collins (e)	A5-18
	E. B. Dagan	S7-55
	R. X. Gonzalez (e)	R3-79
	M. F. Jarvis (e)	K8-50
	J. Pennock (e)	H0-12
	R. W. Small (e)	A2-45
	J. H. Zeisloft (e)	H0-12
	Hanford Technical Library	P8-55
	Public Reading Room	H2-53
4	<u>Bechtel Hanford, Inc.</u>	
	G. E. Fitzgibbon	H0-09
	R. J. Landon	H0-18
	R. A. Lewis	H0-18
	L. A. Mihalik	H9-12
1	<u>Hanford Environmental Health Foundation</u>	
	S. M. McInturff	H1-77
9	<u>ICF Kaiser Hanford Company</u>	
	T. D. Boucher (e)	S2-41
	B. J. Dixon (e)	B4-20
	W. S. Dunnivant (e)	G3-10
	D. R. Herman (e)	S2-12
	R. G. Hollenbeck (e)	G3-17
	C. E. Marple (e)	S4-56
	J. H. Mizner	B4-20
	A. D. Poor	L6-55
	R. G. Winkelman (e)	L7-10

DISTRIBUTION (continued)

Number of Copies

3	<u>Pacific Northwest Laboratory</u>	
	J. A. Engel-Cox	P7-79
	E. A. Flores (e)	P7-79
	K. M. Fowler (e)	K8-03
33	<u>Westinghouse Hanford Company</u>	
	N. A. Ballantyne (e)	S6-71
	T. G. Beam (e)	S4-66
	J. R. Best (e)	T6-12
	J. E. Bramson (e)	T5-54
	J. F. Brown (e)	G2-06
	F. J. Carvo (e)	N1-41
	R. D. Clements (e)	L6-39
	D. J. Farquhar (e)	H7-34
	M. M. Feucht (e)	S6-31
	S. W. Hildreth (e)	S6-21
	N. O. Hinojosa (e)	X3-67
	A. E. Hill (e)	N2-57
	M. B. Jaeger (e)	L4-02
	J. R. Kirkendall	B3-28
	K. K. Kover (e)	T3-28
	K. A. Larkin (e)	X3-59
	C. J. Lewis (e)	T4-52
	K. S. McDowell (e)	G2-06
	D. S. Merry (5)	B3-28
	S. E. Myers (e)	S3-24
	R. W. Szelmezcza (e)	L6-05
	R. J. Uhlich	B3-28
	R. W. Whitlock (e)	T4-03
	B. E. Woodford (e)	T5-56
	Central Files	A3-88
	Correspondence Control	R1-20
	DPC	A3-95
	EDMC (2)	H6-08

(e) = Electronic copy