

Appendix G

2/162 Infantry Organizational Maintenance Shop

Baseline Inventory

A baseline inventory is necessary for two reasons. The quantities of waste generation or toxic material use are assessed to target specific waste streams, materials being used, or activities for pollution prevention. annual reports on waste generation and toxic material use will be compared with the baseline inventories to evaluate the effectiveness of pollution prevention projects and to monitor progress in achieving the 2/162 Infantry Organizational Maintenance Shop.

Some categories overlap (e.g., solvent wastes, waste acids and bases, and EPA Toxic 17 wastes also will appear as hazardous waste; some of the EPA Toxic 17 wastes can be solvents). The use of the baseline inventory will assist in developing projects for meeting the pollution prevention goals of the 2/162 Infantry Organizational Maintenance Shop.

BASELINE INVENTORY FOR 2/162 Infantry Organizational Maintenance Shop 1994				
Waste Type	RCRA Waste Code(s)	Waste (lbs)	% of Total Waste	Process or Operation Generating Waste
Petroleum Naphtha	D001	463	100	Parts Cleaning

2/162 Infantry Organizational Maintenance Shop

POLLUTION PREVENTION GOALS				
Waste Type	Subtype	Reduction Goal (%)	Baseline Year	Target Year
Hazardous Waste	Petroleum Naphtha	100%	1994	1994
	Lead/Acid Battery	100%		1996
	Aerosol Cans	100%		1995
Solid Waste	Office paper	50%	1994	1995
	Cardboard	100%		1995
	Antifreeze	50%		1996
Ozone Depleting Chemical Use	Class I ODS	100	1994	2003
TRI Reportable Releases		50%	1994	1999

Pollution Prevention Opportunity Assessment

The PPOA enables the 2/162 Infantry Organizational Maintenance Shop to examine the alternatives available for pollution prevention. The modules identify the waste stream and the operations from which the stream may be generated, describe the process, and present several pollution prevention alternatives. Each alternative is described along with its advantages and disadvantages.

Assessment modules that apply to 2/162 INF OMS are:

- Battery Acids/Lead-Acid Batteries from Vehicle Maintenance
- Electronic Equipment Battery Changeout
- Halon Use in Fire Extinguishers
- Manual Surface Preparation Using Rags
- Solid Waste
- Used Antifreeze from Vehicle Maintenance
- Used Oil Filters from Vehicle Maintenance
- Used Oil from Vehicle Maintenance
- Vehicle Washing
- Waste Solvents from Parts Cleaning (ZEP)

➤ Past Pollution Prevention Projects

The status of past pollution prevention projects are discussed. Each project is described to include location implemented, implementation date, targeted waste type (e.g., hazardous waste, EPA Toxic 17 Wastes, ozone-depleting chemical), actual waste, actual implementation costs, actual savings, and funding sources. Through implementation of the past projects the 2/162 Infantry Organizational Maintenance Shop has achieved a Conditionally Exempt Generator Status.

Project Title: Parts Cleaning and Washing

Description: Installation of a ZEP parts cleaner has significantly reduced the generation because the solvent is never removed from the parts washer. Due to evaporation, small quantities of new solvent are added, as required.

Location: 2/162 IN OMS

Implementation Date: 1994

Targeted Waste Type(s): Hazardous Waste/EPA Toxic 17/Solvent Wastes

Waste Reduction: 100%

Implementation Costs: \$5000.00

Savings: Elimination of the waste stream has saved the installation \$2400.00 per year in reduced waste disposal cost.

Funding Source:

Project Title: Paper/Cardboard Recycling Sub Site

Description: Manual recycling of office paper and cardboard into recycling bins

Location: 2/162 IN OMS

Implementation Date: 1995

Targeted Waste Type(s): Solid Waste

Waste Reduction: 50% office paper and 100% cardboard

Implementation Costs: N/A

Savings: Reduction of the waste stream has saved the installation _____ per year in reduced waste disposal cost.

Funding Source:

Project Title: Aerosol Can Puncturing Device

Description: Aerosol can puncturing device to be installed in the OMS bay area

Location: 2/162 IN OMS

Implementation Date: 1995

Targeted Waste Type(s): ODS

Waste Reduction: 100%

Implementation Costs: N/A

Savings: \$1350.00

Funding Source:

Project Title: Battery Acid/Lead Acid Batteries from Vehicle Maintenance

Description: Lead Acid Batteries are being exchanged on a one-for-one basis with Sterling Battery Company.

Location: 2/162 IN OMS

Implementation Date: 1996

Targeted Waste Type(s): Hazardous Wastes, EPA Toxic 17

Waste Reduction: 100%

Implementation Costs: N/A

Savings: Elimination of the waste stream has saved the installation \$2870.00 per year in reduced waste disposal cost.

Funding Source:

Project Title: Antifreeze Recycler

Description: Antifreeze filter type recycling system

Location: 2/162 IN OMS

Implementation Date: 1996

Targeted Waste Type(s): Ethylene Glycol

Waste Reduction: 50%

Implementation Costs: \$2200.00

Savings: Reduction of waste stream has saved the installation \$1500.00 per year in reduced waste disposal costs.

Funding Source:

Project Title: Oil Filter Crusher

Description: The Oberg Model P-300 filter crusher is used to eliminate the amount of oil left in the filter after it is removed from service. The P-300 deposits the crushed filters directly into a transport drum for disposal. EPR number OR00099003.

Location: 2/162 IN OMS

Implementation Date: 1998

Targeted Waste Type(s): Hazardous Chemicals listed on EPA's 17 ind. Toxics List

Waste Reduction: Recovery of metal by eliminating the oil from the element allowing the metal to be recycled, and keeping the oil saturated filters out of the landfill.

Implementation Costs: 1 unit @ \$3,988.80

Savings: \$1,935.50 annually per unit.

Funding Source: 1998 Year end funds

Project Title: Weapons Cleaning/Parts Washer System IT48WC

Description: The Inland Technology IT-48WC Weapons Cleaning System NSN 6850-01-397-2539 is a high volume usage system that recycles the Breakthrough solvent continuously through a high efficiency filtration system. EPR number OR00099002.

Location: 2/162 IN OMS

Implementation Date: 1998

Targeted Waste Type(s): Other Hazardous Materials

Waste Reduction: 1,1,1-Trichloroethane

Implementation Costs: \$3684.15

Savings: \$2,031.00

Funding Source: 1998 year end funds.

Project Title: Weapons Cleaning/Parts Washer System IT48WC

Description: The Inland Technology IT-48WC Weapons Cleaning System NSN 6850-01-397-2539 is a high volume usage system that recycles the Breakthrough solvent continuously through a high efficiency filtration system. EPR number OR00099002.

Location: 2/162 IN OMS

Implementation Date: 1999

Targeted Waste Type(s): Other Hazardous Materials

Waste Reduction: 1,1,1-Trichloroethane

Implementation Costs: \$3684.15

Savings: \$2,031.00

Funding Source: 1999 year end funds

Project Title: ODS Elimination Water Coolers

Description: Eliminate all appliances and equipment that use ozone depleting substances. These include fire extinguishers using Halon 1301 and refrigeration systems containing CFCS. EPR number OR00099005.

Location: 2/162 IN OMS

Implementation Date: 1999

Targeted Waste Type(s): Refrigerants-*R11, R12, R22 etc.*

Waste Reduction: Ozone Depleting Substances

Implementation Costs: \$627.44

Savings:

Funding Source: 1999 year end funds

Project Title: Weapons Cleaning/Parts Washer System IT48WC

Description: The Inland Technology IT-48WC Weapons Cleaning System NSN 6850-01-397-2539 is a high volume usage system that recycles the Breakthrough solvent continuously through a high efficiency filtration system. EPR number OR00099002.

Location: 2/162 IN OMS

Implementation Date: 2001

Targeted Waste Type(s): Other Hazardous Materials

Waste Reduction: 1,1,1-Trichloroethane

Implementation Costs: \$3,684.15 (purchased two systems)

Savings: \$2,031.00

Funding Source: 2001 Year-end funds.

Project Title: Propane Cylinder Recycling System

Description: The New Pig ProSolve system safely removes the valve stem so canister can be recycled as scrap steel. Activated carbon filters help remove Volatile Organic Compounds from propellant. EPR number OR00000001.

Location: 2/162 IN OMS

Implementation Date: 2001

Targeted Waste Type(s): Reactive hazardous waste - generic compressed gas, Volatile Organic Compounds.

Waste Reduction: Metal, Reactive HW

Implementation Costs: \$697.03 ea

Savings: \$5,112.00

Funding Source: 2001 Year-end funds.

Project Title: Aerosol Can Depressurizer

Description: A Lab Safety Aerosol Can Depressurizer that relieves the pressure in aerosol cans and allows the residual contents to be collected for disposal. With the contents thoroughly depleted the can may be recycled as scrap metal. EPR number OR 00099004.

Location: 2/162 OMS

Implementation Date: 2001

Targeted Waste Type(s): Solid Waste (metal), Reactive Hazardous Waste generic

Waste Reduction: Metal, Reactive HW

Implementation Costs: \$1468.10

Savings: \$1,350.00

Funding Source: 2001 Year-end funds.

➤ **Current Pollution Prevention Projects**

The status of currently funded pollution prevention projects are discussed next. Each project will be described to include location to be implemented, anticipated implementation date, targeted waste type (e.g., hazardous waste, EPA Toxic 17 Wastes, ozone-depleting chemicals), expected waste reduction, estimated implementation costs, estimated savings, and funding sources.

Project Title: Secondary Containment Structures

Description: As required by the SPCCP for this facility and 40 CFR 112.3 and OAR 340-047-0160. A secondary containment structure is needed to be built to house the fuel hauling vehicles that are located at this facility. EPR OR11200001.

Location:

Implementation Date:

Targeted Waste Type(s): Petroleum's, Oils and Lubricants

Waste Reduction: Soil contamination.

Implementation Costs: \$66,000

Savings:

Funding Source:

Project Title: Containment Structures

Description: Implement camp-wide SPCCP as required in 40 CFR 112 and OAR 340-047-0160. This project will fund the purchase of a secondary containment unit that will be used to store drums or containers which contain hazardous materials. Funds will purchase one walk-in storage buildings. EPR OR112.

Location:

Implementation Date:

Targeted Waste Type(s): Petroleum's, Oils and Lubricants

Waste Reduction: Soil contamination.

Implementation Costs: \$28,000

Savings:

Funding Source:

➤ **Future Pollution Prevention Projects**

The status of proposed pollution prevention projects is discussed next. Each project will be described to include location to be implemented, anticipated implementation date, targeted waste type (e.g., hazardous waste, EPA Toxic 17 Wastes, ozone-depleting chemicals), expected waste reduction, estimated implementation costs, estimated saving, and funding sources.

ECONOMIC ANALYSIS SUMMARY FOR FUTURE POLLUTION PREVENTION PROJECTS					
Polluting Process	P2 Opportunity	Investment Cost (\$)	Net Annual Savings (\$)	Payback Period (Years)	Net Present Value of Operation (\$)
Safety Kleen	Solvent Waste Station Purchase and Modification	198,500	(5,841)	No Payback	(243,603)
Safety Kleen	Aqueous Cleaner with Jetwasher	701,050	44,639	15.7	(356,345)

POLLUTION PREVENTION IMPLEMENTATION PLAN FOR FUTURE PROJECTS							
Project Title	Location	Waste Type	Reduction Expected (lbs/year)	Estimated Cost(\$)	Estimated Savings (\$/yr)	Expected Implement Date	EPR Status
Cardboard Baler	Recycling Center	Solid Waste	400,000	99,000	30,000	CY95	Entered

2/162 INF OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1997					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Petroleum Naphtha	100%	463	0	
Hazardous Waste	Sulfuric Acid	100%		0	
Hazardous Waste	Aerosol Cans	100%		0	
Solid Waste	Cardboard	100%		4000	
Solid Waste	Antifreeze	50%		1500	
Solid Waste	Office Paper	50%		2000	
Ozone Depleting Chemical Use	Class I ODS	100%			

2/162 INF OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1998					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Petroleum Naphtha	100%	463	32	
Hazardous Waste	Sulfuric Acid	100%			
Hazardous Waste	Aerosol Cans	100%			
Solid Waste	Cardboard	100%			
Solid Waste	Antifreeze	50%			
Solid Waste	Office Paper	50%			
Ozone Depleting Chemical Use	Class I ODS	100%		16	

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POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1999					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Petroleum Naphtha	100%	463	0	
Hazardous Waste	Sulfuric Acid	100%			
Hazardous Waste	Aerosol Cans	100%			
Solid Waste	Cardboard	100%			
Solid Waste	Antifreeze	50%			
Solid Waste	Office Paper	50%			
Ozone Depleting Chemical Use	Class I ODS	100%			

2/162 INF OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2000					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Petroleum Naphtha	100%	463		
Hazardous Waste	Sulfuric Acid	100%			
Hazardous Waste	Aerosol Cans	100%			
Solid Waste	Cardboard	100%			
Solid Waste	Antifreeze	50%			
Solid Waste	Office Paper	50%			
Ozone Depleting Chemical Use	Class I ODS	100%			

2/162 INF OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2001					
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Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Petroleum Naphtha	100%	463		
Hazardous Waste	Sulfuric Acid	100%			
Hazardous Waste	Aerosol Cans	100%			
Solid Waste	Cardboard	100%			
Solid Waste	Antifreeze	50%			
Solid Waste	Office Paper	50%			
Ozone Depleting Chemical Use	Class I ODS	100%			