

Appendix I

3/116 Cavalry 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 3/116 Cavalry 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 3/116 Cavalry Organizational Maintenance Shop.

BASELINE INVENTORY FOR 3/116 Cavalry Organizational Maintenance Shop 1994				
Waste Type	RCRA Waste Code(s)	Waste (lbs)	% of Total Waste	Process or Operation Generating Waste
Magnesium Salts Barium, Chromium	D005, D007	447	68	Battery Changeout
Chromium Filters	D007	201	32	NBC Training

3/116 Cavalry Organizational Maintenance Shop

POLLUTION PREVENTION GOALS				
Waste Type	Subtype	Reduction Goal (%)	Baseline Year	Target Year
Hazardous Waste	Magnesium Salts Barium, Chromium	50%	1994	1999
Hazardous Waste	Chromium Filters	75%	1994	1999
Solid Waste Ozone Depleting Chemical Use	Class I ODS	60% 40%	1994	1999 2003
TRI Reportable Releases		50%	1994	1999

Pollution Prevention Opportunity Assessment

The PPOA enables the 3/116 Cavalry 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 3/116 CAV OMS are:

- Application of Sealant/Adhesives
- Battery Acids/Lead-Acid Batteries from Vehicle Maintenance
- Cleanup Solvents from Painting
- Electronic Equipment Battery Changeout
- Halon Use in Fire Extinguishers
- Manual Surface Preparation Using Rags
- Refrigerants (CFCs) from Refrigeration, Cooling-Equipment Maintenance
- Solid Waste
- Used Antifreeze from Vehicle Maintenance
- Used Oil Filters from Vehicle Maintenance
- Used Oil from Vehicle Maintenance
- VOC Emissions from Painting
- Waste Solvents from Parts Cleaning

➤ 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.

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: 3-116th CAV OMS

Implementation Date: 1992

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

Waste Reduction: 100%

Implementation Costs: \$2,800.00

Savings: Elimination of the waste stream has saved the installation \$2,800 per year in reduced waste disposal cost.

Funding Source:

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: 3-116th CAV OMS

Implementation Date: 1994

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

Waste Reduction: 100%

Implementation Costs: \$5,000

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

Funding Source:

Project Title: Laundry of Shop Rags and Coveralls

Description: Commercial laundering of shop rags/coveralls to prevent contaminants in homes.

Location: 3-116th CAV OMS

Implementation Date: 1994

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

Waste Reduction: 100%

Implementation Costs: \$2,500.00

Savings: N/A

Funding Source:

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: 3-116 CAV OMS

Implementation Date: 1999

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

Waste Reduction: Metal, Reactive HW

Implementation Costs: \$577.00

Savings: \$1,350.00

Funding Source: 1998 Year end funds

Project Title: Antifreeze Recyclers

Description: The BG PF4HO High Output Power Flush and Coolant Recycling System flushes the entire cooling system and recycles dirty antifreeze into clean, inhibited automotive spec coolant without draining or handling. The BG PF4HO eliminates the need to drain used antifreeze from the vehicle, drastically reducing the high cost of hazardous waste disposal. Utilizing a closed-loop system, the used antifreeze is circulated through a filtration process which removes impurities. EPR number OR0099001.

Location: 3/116 CAV OMS

Implementation Date: 2000

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

Waste Reduction: Ethylene Glycol

Implementation Costs: \$4335.60

Savings: \$2,536.00

Funding Source: 2000 year end funds

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: 3/116 CAV OMS

Implementation Date: 2001

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: \$3,988.80 ea.

Savings: \$1,935.50 annually per unit.

Funding Source: 2001 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: 3/116 CAV OMS

Implementation Date: 2001

Targeted Waste Type(s): Other Hazardous Materials

Waste Reduction: 1,1,1-Trichloroethane

Implementation Costs: \$3,684.15

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: 3/116 CAV 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: 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 OR10000001.

Location: OMS

Implementation Date: 2002

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

Waste Reduction: Soil contamination.

Implementation Costs: \$297,480

Savings:

Funding Source: NGB

➤ 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: Hot Pressure Washer

Description: Purchase of a Karcher HDS 650 hot pressure washer will replace the current method of removing large automotive components from vehicles and transporting them to the washrack. It will prevent oil and other automotive fluids from dripping onto the bay floors and leaving a trail of contaminated soil from the bay to the washrack. EPR number OR00099007.

Location: 3/116 CAV OMS

Implementation Date:

Targeted Waste Type(s): Hazardous Waste/Hydrocarbons

Waste Reduction: Elimination of contaminated soils.

Implementation Costs: \$3,867.00

Savings: \$2,525.00 annually.

Funding Source: AGI-EPR

➤ **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

3/116 Cavalry Organizational Maintenance Shop POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1997					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Magnesium Salts Barium, Chromium	50	447		
Hazardous Waste	Chromium Filters	75	201		
Solid Waste Ozone Depleting Chemical Use	Class I ODS	100			

3/116 Cavalry Organizational Maintenance Shop POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1998					
Waste Type	Subtype	Reduction Goal (%)	Baseline 1994 (lbs./year)	Current (lbs./year)	Achieved to Date (%)
Hazardous Waste	Magnesium Salts Barium, Chromium	50	447		
Hazardous Waste	Chromium Filters	75	201	135	
Solid Waste Ozone Depleting Chemical Use	Class I ODS	100			

3/116 Cavalry Organizational

Maintenance Shop POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1999					
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Hazardous Waste	Magnesium Salts Barium, Chromium	50	447		
Hazardous Waste	Chromium Filters	75	201	135	
Solid Waste Ozone Depleting Chemical Use	Class I ODS	100			

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Hazardous Waste	Chromium Filters	75	201		
Solid Waste Ozone Depleting Chemical Use	Class I ODS	100			

**3/116 Cavalry Organizational
Maintenance Shop**

POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2001					
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Hazardous Waste	Magnesium Salts Barium, Chromium	50	447		
Hazardous Waste	Chromium Filters	75	201		
Solid Waste Ozone Depleting Chemical Use	Class I ODS	100			