

## Appendix M HQ STARC (-) OMS

### 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 Headquarters State Area Command Organizational Maintenance Shop pollution prevention goals.

<b>BASELINE INVENTORY FOR HQ STARC (-) Organizational Maintenance Shop 1994</b>				
<b>Waste Type</b>	<b>RCRA Waste Code(s)</b>	<b>Waste (lbs)</b>	<b>% of Total Waste</b>	<b>Process or Operation Generating Waste</b>
Petroleum Naphtha	D001	870	72	Parts Cleaning
Ethanol	D001	33	2	NBC Training
Chromium filters	D007	105	8	NBC Training
Lead	D008	23	3	Indoor Firing Range
Lithium Batteries	D001, D003	47	5	Battery Changeout
Sodium Hydroxide	D001, D002	66	6	Printing Process
Magnesium Salts Barium, Chromium	D005, D007	39	3	Battery Changeout
Potassium Hydroxide- Mercury	D009	12	1	Battery Changeout

<b>HQ STARC (-) OMS</b>
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<b>POLLUTION PREVENTION GOALS</b>				
<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline Year</b>	<b>Target Year</b>
Hazardous Waste	Petroleum Naphtha	100	1994	1998
Hazardous Waste	Ethanol	100	1994	1998
Hazardous Waste	Chromium filters	100	1994	1998
Hazardous Waste	Lead	100	1994	1998
Hazardous Waste	Lithium Batteries	100	1994	1998
Hazardous Waste	Sodium Hydroxide	100	1994	1998
Hazardous Waste	Magnesium Salts Barium, Chromium	100	1994	1998
Hazardous Waste	Potassium Hydroxide- Mercury	100	1994	1998
Ozone Depleting Chemical Use	CFCs ( <i>refrigerants i.e. R-12, R-22</i> ) Fire Suppressant Systems ( <i>Halons</i> )	80	1994	1999
Solid Waste	Cardboard & Recyclable Paper	85	1994	2000
TRI Reportable Releases		50%	1994	1999

### **Pollution Prevention Opportunity Assessment**

The PPOA enables the HQ STARC (-) OMS to examine the alternatives available for pollution prevention. The modules identify the waste stream and the operation 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 HQ STARC (-) 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  
 Vehicle and Aircraft Washing  
 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:** 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:** 141 SPT BN

**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:** Antifreeze Recyclers

**Description:** The Techguard Coolant Recycler 88550 Antifreeze Recycler is connected to the vehicle being serviced by using the assortment of connectors provided with the 88550. The vehicle's coolant is circulated through the 88550 that removes scale, suspended material and dissolved toxic metals from the coolant. In essence the coolant never leaves the vehicle. The coolant is restored to ASTM standard 3306 and is warranted for 2 years. EPR number OR00099001.

**Location:** HQ STARC (-) OMS

**Implementation Date:** 1998

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

**Waste Reduction:** Ethylene Glycol

**Implementation Costs:** \$3,332.16

**Savings:** \$2,536.00

**Funding Source:** 1998 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:** HQ STARC (-) 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:** 2 units @ \$3,988.80 ea. Total Investment \$7,977.60

**Savings:** \$1,935.50 annually per unit. Total expected annual savings \$3,871.00

**Funding Source:** 1998 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 and refrigeration systems containing CFCS. EPR number OR00099006.

**Location:** HQ STARC (-) OMS

**Implementation Date:** 1999

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

**Waste Reduction:** Ozone Depleting Substances

**Implementation Costs:** \$832.00

**Savings:**

**Funding Source:** Year-end funds.

**Project Title:** Aqueous Parts Washer

**Description:** Landa Automatic Parts Washer SJ-10H is used to replace a system that uses a paraffinic hydrocarbon solution for parts cleaning. The new system uses an aqueous solution that, once filtered, can be disposed of through the local sewer system. The new system uses a biodegradable detergent. EPR number OR00099011.

**Location:** HQ STARC OMS

**Implementation Date:** 1999

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

**Waste Reduction:** The elimination of a hazardous solution.

**Implementation Costs:** \$3,153.50

**Savings:** Elimination of the waste stream has saved the installation \$2,515.00 per year in reduced waste disposal cost.

**Funding Source:** AGI-EPR

**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:** HQ STARC (-) OMS

**Implementation Date:** 2000

**Targeted Waste Type(s):** Other Hazardous Materials

**Waste Reduction:** 1,1,1-Trichloroethane

**Implementation Costs:** \$3,684.15

**Savings:** \$2,031.00

**Funding Source:** 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 and refrigeration systems containing CFCS. EPR number OR00099006.

**Location:** HQ STARC (-) OMS

**Implementation Date:** 2000

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

**Waste Reduction:** Ozone Depleting Substances

**Implementation Costs:** \$832.00

**Savings:**

**Funding Source:** 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:** HQ STARC(-) 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:** 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 OR21000002.

**Location:** OMS

**Implementation Date:** 2002

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

**Waste Reduction:** Soil contamination.

**Implementation Costs:** \$148,585

**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.

➤ **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.

<b>ECONOMIC ANALYSIS SUMMARY FOR FUTURE POLLUTION PREVENTION PROJECTS</b>					
<b>Polluting Process</b>	<b>P2 Opportunity</b>	<b>Investment Cost (\$)</b>	<b>Net Annual Savings (\$)</b>	<b>Payback Period (Years)</b>	<b>Net Present Value of Operation (\$)</b>
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)

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

<b>HQ STARC (-) OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1997</b>					
<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline 1994 (lbs./year)</b>	<b>Current (lbs./year)</b>	<b>Achieved to Date (%)</b>
Hazardous Waste	Petroleum Naphtha	100	870	240	
Hazardous Waste	Ethanol	100	33		
Hazardous Waste	Chromium filters	100	105	52	
Hazardous Waste	Lead	100	23		
Hazardous Waste	Lithium Batteries	100	47		
Hazardous Waste	Sodium Hydroxide	100	66		
Hazardous Waste	Magnesium Salts Barium, Chromium	100	39	26	
Hazardous Waste	Potassium Hydroxide- Mercury	100	12	60	
Ozone Depleting Chemical Use	CFCs ( <i>refrigerants i.e. R-12, R-22</i> ) Fire Suppressants ( <i>Halons</i> )	50			
Solid Waste	Cardboard and Recyclable Paper	85			

<b>HQ STARC (-) OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1998</b>					
<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline 1994 (lbs./year)</b>	<b>Current (lbs./year)</b>	<b>Achieved to Date (%)</b>
Hazardous Waste	Petroleum Naphtha	100	870	360	
Hazardous Waste	Ethanol	100	33	66	
Hazardous Waste	Chromium filters	100	105	83	
Hazardous Waste	Lead	100	23		
Hazardous Waste	Lithium Batteries	100	47		
Hazardous Waste	Sodium Hydroxide	100	66		
Hazardous Waste	Magnesium Salts Barium, Chromium	100	39		
Hazardous Waste	Potassium Hydroxide- Mercury	100	12		
Ozone Depleting Chemical Use	CFCs (refrigerants i.e. R-12, R-22) Fire Suppressants (Halons)	50			
Solid Waste	Cardboard and Recyclable Paper	85			

<b>HQ STARC (-) OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1999</b>
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<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline 1994 (lbs./year)</b>	<b>Current (lbs./year)</b>	<b>Achieved to Date (%)</b>
Hazardous Waste	Petroleum Naphtha	100	870	1165	
Hazardous Waste	Ethanol	100	33	50	
Hazardous Waste	Chromium filters	100	105		
Hazardous Waste	Lead	100	23		
Hazardous Waste	Lithium Batteries	100	47		
Hazardous Waste	Sodium Hydroxide	100	66		
Hazardous Waste	Magnesium Salts Barium, Chromium	100	39		
Hazardous Waste	Potassium Hydroxide- Mercury	100	12		
Ozone Depleting Chemical Use	CFCs (refrigerants i.e. R-12, R-22) Fire Suppressants (Halon)	50			
Solid Waste	Cardboard and Recyclable Paper	85			

**HQ STARC (-) OMS  
POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2000**

<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline 1994 (lbs./year)</b>	<b>Current (lbs./year)</b>	<b>Achieved to Date (%)</b>
Hazardous Waste	Petroleum Naphtha	100	870		
Hazardous Waste	Ethanol	100	33		
Hazardous Waste	Chromium filters	100	105		
Hazardous Waste	Lead	100	23		
Hazardous Waste	Lithium Batteries	100	47		
Hazardous Waste	Sodium Hydroxide	100	66		
Hazardous Waste	Magnesium Salts Barium, Chromium	100	39		
Hazardous Waste	Potassium Hydroxide- Mercury	100	12		
Ozone Depleting Chemical Use	CFCs (refrigerants i.e. R-12, R-22) Fire Suppressants (Halons)	50			
Solid Waste	Cardboard and Recyclable Paper	85			

<b>HQ STARC (-) OMS POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2001</b>					
<b>Waste Type</b>	<b>Subtype</b>	<b>Reduction Goal (%)</b>	<b>Baseline 1994 (lbs./year)</b>	<b>Current (lbs./year)</b>	<b>Achieved to Date (%)</b>

Hazardous Waste	Petroleum Naphtha	100	870		
Hazardous Waste	Ethanol	100	33		
Hazardous Waste	Chromium filters	100	105		
Hazardous Waste	Lead	100	23		
Hazardous Waste	Lithium Batteries	100	47		
Hazardous Waste	Sodium Hydroxide	100	66		
Hazardous Waste	Magnesium Salts Barium, Chromium	100	39		
Hazardous Waste	Potassium Hydroxide- Mercury	100	12		
Ozone Depleting Chemical Use	CFCs (refrigerants i.e. R-12, R-22) Fire Suppressants (Halons)	50			
Solid Waste	Cardboard and Recyclable Paper	85			