

## Appendix H Central Oregon Unit Training Equipment Site

### 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 Central Oregon UTES's pollution prevention goals.

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 Central Oregon UTES.

<b>BASELINE INVENTORY FOR Central Oregon Unit Training Equipment Site 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	737	41	Parts Cleaning
Potassium Hydroxide-Mercury	D009	54	3	Battery Changeout
Magnesium Salts Barium, Chromium	D005, D007	38	2	Battery Changeout
Antifreeze	D010	929	51	Vehicle Maintenance
Lithium Batteries	D001, D003	33	1	Battery Changeout

<p><b>Central Oregon Unit Training Equipment Site POLLUTION PREVENTION GOALS</b></p>
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Waste Type	Subtype	Reduction Goal (%)	Baseline Year	Target Year
Hazardous Waste	Petroleum Naphtha	100	1994	1994
Hazardous Waste	Potassium Hydroxide-Mercury	20	1994	1999
Hazardous Waste	Magnesium Salts Barium, Chromium	20	1994	1999
Hazardous Waste	Antifreeze	100	1994	1999
Hazardous Waste	Lithium Batteries	20	1994	1999
Solid Waste	Cardboard	100		
Ozone Depleting Chemical Use	Class I ODS	100	1994	2003
TRI Reportable Releases		50%	1994	1999

### Pollution Prevention Opportunity Assessment

The PPOA enables the Central Oregon UTES 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 Central Oregon UTES 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
- Radiator-Cleaning Waste
- Refrigerants (CFCs) from Refrigeration, Cooling-Equipment Maintenance
- Sandblasting
- Solid Waste
- Used Antifreeze from Vehicle Maintenance

Used Oil Filters from Vehicle Maintenance  
 Used Oil from Vehicle Maintenance  
 Vehicle and Aircraft Washing  
 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:** 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:** COUTES

**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:** NGB

#### **Project Title:** Parts Cleaning and Washing

**Description:** Installation of a Better Engineered aqueous parts washer to reduce reliance on solvents. The CSMS plans to use the aqueous parts washer for cleaning large engine and drive train components. Use of the aqueous parts washer will reduce the volume of solvent requiring disposal as hazardous waste, reduce the associated disposal costs, and reduce worker exposure to solvent emissions.

**Location:** COUTES

**Implementation Date:** 1995-1996

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

**Waste Reduction:**

**Implementation Costs:**

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

**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:** COUTES

**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:** Cardboard Recycling

**Description:** Cardboard is collected and recycled in a bin provided by High-Desert recycling. The collected material is picked up once each month.

**Location:** COUTES

**Implementation Date:** 1996

**Targeted Waste Type(s):** Solid Waste

**Waste Reduction:**

**Implementation Costs:** None

**Savings:**

**Funding Source:** N/A

**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:** COUTES

**Implementation Date:** 1999

**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:** 1999 year end funds.

**Project Title:** Antifreeze Recycler

**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:** COUTES

**Implementation Date:** 1999

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

**Waste Reduction:** Ethylene Glycol

**Implementation Costs:** \$1,845.00

**Savings:** \$2,536.00

**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 and refrigeration systems containing CFCS. EPR number OR00099005.

**Location:** COUTES

**Implementation Date:** 1999

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

**Waste Reduction:** Ozone Depleting Substances

**Implementation Costs:** \$627.44

**Savings:** None

**Funding Source:** AGI-EPR

**Project Title:** Aqueous Parts Washer

**Description:** Landa Automatic Parts Washer 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:** COUTES

**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:** 1999 year end funds.

**Project Title:** Paint Gun Cleaner

**Description:** A self-contained Inland Technology IT-100 paint gun washer. NSN 4250-01-465-3191 using EP-921 Solvent. The IT-100's features include stainless steel construction, filtration technology and standard 6.5 GPM free flow delivery air-operated diaphragm pump unit that uses solvent to clean paint guns. EPR number OR00099008.

**Location:** COUTES

**Implementation Date:** 2000

**Targeted Waste Type(s):** Safety Kleen

**Waste Reduction:** Solvents

**Implementation Costs:** \$2,680.55 ea

**Savings:** \$3,810.00 ea

**Funding Source:** 2000 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:** COUTES

**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:** 2000 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:** COUTES

**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 OR17500001.

**Location:** OMS

**Implementation Date:** 2002

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

**Waste Reduction:** Soil contamination.

**Implementation Costs:** \$123,000

**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:**  
**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:**

**Project Title:** Ultrasonic Radiator Dip Tank

**Description:** A dip tank operating with ultrasound as the cleaning agent in the repair and maintenance of radiators. EPR number 00099010.

**Location:**  
**Implementation Date:**  
**Targeted Waste Type(s):** Potassium Hydroxide and sludge with heavy metals.  
**Waste Reduction:** Potassium Hydroxide  
**Implementation Costs:** \$21,000.00  
**Savings:**  
**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)

<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>Central Oregon Unit Training Equipment Site 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	737		
Hazardous Waste	Potassium Hydroxide-Mercury		54		
Hazardous Waste	Magnesium Salts Barium, Chromium		38		
Hazardous Waste	Antifreeze	100	929		
Hazardous Waste	Lithium Batteries		33		
Ozone Depleting Chemical Use	Class I ODS	100			
Solid Waste	Cardboard	80			85

<b>Central Oregon Unit Training Equipment Site 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	737		
Hazardous Waste	Potassium Hydroxide-Mercury		54		
Hazardous Waste	Magnesium Salts Barium, Chromium		38		
Hazardous Waste	Antifreeze	100	929		
Hazardous Waste	Lithium Batteries		33		
Ozone Depleting Chemical Use	Class I ODS	100		16	
Solid Waste	Cardboard	80	1994		

**Central Oregon Unit Training Equipment Site**

<b>POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 1999</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	737		
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Hazardous Waste	Antifreeze	100	929	16	
Hazardous Waste	Lithium Batteries		33		
Ozone Depleting Chemical Use	Class I ODS	100			
Solid Waste	Cardboard	80	1994		

<b>Central Oregon Unit Training Equipment Site POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2000</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>
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Hazardous Waste	Magnesium Salts Barium, Chromium		38		
Hazardous Waste	Antifreeze	100	929		
Hazardous Waste	Lithium Batteries		33		
Ozone Depleting Chemical Use	Class I ODS	100			
Solid Waste	Cardboard	80	1994		

<b>Central Oregon Unit Training Equipment Site POLLUTION PREVENTION ACHIEVEMENT REPORT FOR 2001</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	737		
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Ozone Depleting Chemical Use	Class I ODS	100			
Solid Waste	Cardboard	80	1994		