Appendix C
References/Pollution Prevention Opportunity Assessments

ENVIRONMENTAL PROTECTION AGENCY GUIDANCE

General Guidance


Industry-Specific Guidance

These guides list source-reduction and recycling techniques for specific industries. The guides have been published by the Pollution Prevention Research Branch of EPA's Office of Research and Development as a series of industry-specific pollution prevention guidance manuals.

<table>
<thead>
<tr>
<th>Industrial Category</th>
<th>EPA Document No.</th>
<th>Date</th>
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<tbody>
<tr>
<td>Automotive Refinishing Industry</td>
<td>EPA/625/7-91/016</td>
<td>10/91</td>
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<td>Auto Repair Industry</td>
<td>EPA/625/7-91/013</td>
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<td>Fiberglass Reinforced and Composite Plastics</td>
<td>EPA/625/7-91/014</td>
<td>1991</td>
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<td>Mechanical Equipment Repair Industry</td>
<td>EPA/625/R-92/008</td>
<td>1992</td>
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<tr>
<td>Metal Finishing Industry</td>
<td>EPA/625/R-92/011</td>
<td>1992</td>
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</tbody>
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Fact Sheets

The following fact sheets contain overviews, tips, or guidelines for pollution prevention. Some provide only general information or advice on how to set up programs; others identify pollution prevention opportunities for specific industries, processes, or materials. EPA, state agencies, and local governments produced the fact sheets. In many cases, multiple sources have published fact sheets on particular topics. Fact sheets on the topic areas below are available from the EPA library, 401 M Street, SW, Washington DC 20460 (202/260-1963). The source of this information is Pollution Prevention Resources and Training Opportunities in 1992, EPA, Office of Pollution Prevention and Toxics and Office of Environmental Engineering and Technology Demonstration, EPA/5650/8-92-002, January 1992.

FACT SHEETS
General and Introductory Information

Conservation Tips for Business
General Guidelines
Getting More Use Out of What We Have
Glossary of Waste Reduction Terms
Guides to Pollution Prevention
Hazardous Waste Minimization
How Business Organizations Can Help
Local Governments and Pollution Prevention
Pollution Prevention (General)
Pollution Prevention Fees
Pollution Prevention Training and Education
Pollution Prevention Through Waste Reduction
Recent Publications
Reduce Hazardous Waste
Reuse Strategies for Local Government
Source Reduction Techniques for Local Government
U.S. EPA's Pollution Prevention Program
Waste Exchanges: Everybody Wins!
Waste Exchange Services
Waste Minimization Fact Sheet
Waste Minimization in the Workplace
Waste Reduction Can Work For You
Waste Reduction Overview
Waste Reduction/Pollution Prevention: Getting Started
Waste Reduction Tips for All Businesses
Waste Source Reduction
Waste Source Reduction Checklist
What is Pollution Prevention?
Why Reduce Waste?

Legislative Information/EPA and State Initiatives

EPA's 2% Set Aside Pollution Prevention Projects
EPA's "List of Lists" Projects
EPA's Pollution Prevention Enforcement Settlement Policy
EPA's Pollution Prevention Incentives for States
EPA's Pollution Prevention Strategy
New Form R Reporting Requirements
Oregon's Toxic Use Reduction Act
Pollution Prevention Act of 1990

Setting Up A Program
1991 Small Business Pollution Prevention Grants
An Organization Strategy for Pollution Prevention
Considerations in Selecting a Still for Onsite Recycling
Pollution Prevention Grant Program Summaries and Reports
Procuring Recycled Products
Recycling Market Development Program
Selecting a Supplier, Hauler, and Materials Broker
Solid Waste Management Financial Assistance Program
Source Reduction at Your Facility
Starting Your Own Waste Reduction Program
The Alexander Motor's Success Story
The Eastside Plating Success Story
The Wacker Payoff
Waste Reduction Checklists
   General
   Cleaning
   Coating/Painting
   Formulating
   Machining
   Operating Procedures
   Plating/Metal Finishing
Waste Source Reduction: Implementing a Program

Process/Material Specific

Aerosol Containers
Aircraft Rinsewater Disposal
Acids/Bases
Chemigation Practices to Prevent Groundwater Contamination
Corrugated Cardboard Waste Reduction
Demolition
Empty Containers
Gunwasher Maintenance
Lead Acid Batteries
Machine Coolants:
   Prolonging Coolant Life
   Waste Reduction
Metal Recovery:
   Dragout Reduction
   Ion Exchange/Electrolytic Recovery
   Etchant Substitution
Old Paints, Inks, Residuals, and Related Materials
Pesticides:
   Disposal of Unused Pesticides, Tank Mixes, and Rinsewater
   In-Filled Sprayer Rinse System to Reduce Pesticide Wastes
   Pesticide Container Disposal
Preventing Pesticide Pollution of Surface and Groundwater  
Preventing Well Contamination by Pesticides  
Protecting Mountain Springs from Pesticide contamination  
Reducing and Saving Money Using Integrated Pest Management  
Metals Recycling  
Office Paper Waste Reduction  
Plastics:  
The Facts About Production, Use, and Disposal  
The Facts on Degradable Plastics  
The Facts on Recycling Plastics  
The Facts on Source Reduction  
Printing Equipment  
Refrigerant Reclamation Equipment/Services  
Reverse Osmosis  
Safety Kleen, Inc. Users  
Shop Rags from Printers  
Small Silver Recovery Units  
Solvents:  
Alternatives to CFC-113 Used in the Cleaning of Electronic Circuit Boards  
Onsite Solvent Reclamation  
Reducing Shingle Waste at a Manufacturing Facility  
Reducing Solvent Emissions from Vapor Degreasers  
Small Solvent Recovery Systems  
Solvent Loss Control  
Solvent Management: Fiber Production Plant  
Solvent Reuse: Technical Institute  
Trichloroethylene and Stoddard Solvent Reduction Alternatives  
Solvent Recovery: Fiber Production Plant  
Solvent Reduction in Metal Parts Cleaning  
Ultrafiltration  
Used Containers: Management  
Used Oil Recycling  
Waste Management Guidance for Oil Cleanup  
Water and Chemical Reduction for Cooling Towers  
Waste Water Treatment Opportunities  

Industry-Specific  

Auto Body Shops  
Automotive Painting  
Automotive/Vehicle repair Shops  
Asbestos Handling, Transport, and Disposal  
Machine Toolers  
Metal Finishers:  
General  
Effluent Minimization
Rinsewater Reduction

U.S. ARMY GUIDANCE

General Assistance

U.S. Army Construction Engineering Research Laboratory. P.O. Box 4005, Champaign, IL, 61820. 800-USA-CERL
U.S. Army Cold Regions Research and Engineering Laboratory (CERCL), Hanover, NH 03755-1290. 603-646-4200, DSN 684-4200
U.S. Army Environmental Hygiene Agency. Aberdeen Proving Ground, MD, 21010. (301) 671-3651 or DSN 584-3651.
U.S. Army Environmental Office. The Pentagon, Washington, DC, 20310-2600, (703) 693-5032 or DSN 223-5032.
U.S. Army Environmental Policy Institute. Champaign, IL, 61820. (217) 373-3320.

Pollution Prevention

U.S. Army Environmental Center (formerly the U.S. Army Toxic and Hazardous Materials Agency). Environmental Compliance Division. (301) 671-2427 or DSN 584-2427.

Recycling

Defense Logistics Agency. Check local Defense Reutilization and Marketing Organization (DRMO) Fort Lewis WA.

Air Pollution

U.S. Army Environmental Hygiene Agency. Air Pollution Engineering Division. Air Pollution Source Management (301) 671-3500 or DSN 584-3500; or Ambient Air Quality Management (301) 671-3954 or DSN 584-3954.
U.S. Army Environmental Center. Environmental Compliance Division. (301) 671-2427 or DSN 584-2427.

CFCs and Halon

U.S. Army Environmental Office. The Pentagon, Washington, DC 20310-2600, (703) 693-5032 or DSN 223-5032.
U.S. Army Environmental Center. Environmental Compliance Division. (301) 671-2427 or DSN 584-2427.

Endangered Threatened Species, Natural Resources

U.S. Army Environmental Center. Natural and Cultural Resource Division (703) 355-7968 or DSN 345-7968.
U.S. Army Engineering Waterways Experiment Station (CEWES), Vicksburg, MS 39180-6199, (601) 634-2512, FTS 542-2513.

Hazardous and Toxic Waste and Material Management

U.S. Army Environmental Center. Environmental Compliance Division. (301) 671-2427 or DSN 584-2427.
U.S. Army Environmental Hygiene Agency. Waste Disposal Engineering Division. (301) 671-3651 or DSN 584-3651.
Environmental Protection Agency-RCRA/Superfund Hotline. (800) 424-9346.
Environmental Protection Agency-TSCA Hotline. (202) 554-1404.

Hazardous Waste Minimization

U.S. Army Environmental Center. Environmental Compliance Division. Army HAZMIN Program. (301) 671-2427 or DSN 584-2427.
U.S. Army Environmental Hygiene Agency. Waste Disposal Engineering Division, (301) 671-3651 or DSN 584-3651.

Solid Waste Management

U.S. Army Environmental Center. Environmental Compliance Division. (301) 671-2427 or DSN 584-2427.

General Environmental/Pollution Prevention

National Defense Center for Environmental Excellence. 1415 Scalp Avenue, Johnstown, PA 15904. (814) 269-2432
Air Force Center for Environmental Excellence, Pollution Prevention Division, Brooks Air Force Base, TX 78235-5318. (210) 526-4214, DSN 240-4214.
Navy Energy and Environmental Support Agency (NEESA). Port Hueneme, CA (805) 982-4897.
Annapolis Detachment of the Carderock Division, Naval Surface Warfare Center, Environmental Protection Branch, Craig Alig, Director, (410) 267-3526, DSN 281-3526.
Publications

U.S. Army Environmental Strategy into the 21\textsuperscript{st} Century, 1992.
U.S. Army Environmental Center, \textit{The Environmental Update, published quarterly.}

Pollution Prevention Opportunity Assessments

**ELECTROPLATING AND METAL FINISHING**
Electrodialysis for Anodizing Bath Solutions
Electroless Nickel Bath Life Extension
High Velocity OXY-Fuel Thermal Spray
Non-Cyanide Nickel Strippers
Surface Coating by Physical Vapor Deposition
Sulfuric/Boric Acid Anodizing

**HAZARDOUS MATERIALS/WASTE MANAGEMENT**
Hazardous Material Affirmative Procurement Policies/Procedures
Hazardous Material Shelf Life Management
Waste Analysis Plan
Hazardous Materials Shelf Life Optimization
Hazardous Waste Container Labeling, Storage, and Transportation
hazardous Material/Hazardous Waste Management
Printed Circuit Board Recycling
Recycling Photo/X-Ray Processing and Printing Wastes
Software to Evaluate the Profitability of Pollution Prevention Investments using the Method of “Total Cost Assessment”
Spill Prevention Techniques

**OZONE DEPLETING SUBSTANCES**
Numbering System for CFCs, HCFCs, and Halons
R-502 Alternative
Purchase Restrictions on CFC-containing Appliances
Aerosol Can Puncturing and Crushing
Non-chlorofluorocarbon Alternatives for Air Conditioning and Refrigeration
Alternatives to CFC-12 Tracer Gas for Leak Detection
Aerosol Cooling Spray Substitutes for CFC-12 and HCFC-22
Halon 1211 Replacements
Halon 1301 Replacements
Halon Redistribution/Recovery/Recycling/Reclamation
ODS-free Portable Hand-Held Fire Extinguishers
Refrigerant Tracking Software
Restrictions on the use of Hydrofluorocarbons
Recovery/Recycling of CFC-12 and CFC-134a
ODS-free Corrosion Inhibitors/Moisture Displacers
ODS-free Cooling/Freezing Product
ODS-free Leak Detector for Fuel Cells
ODS-free Substitute for General Purpose Aerosol Lubricant
ODS-free Aircraft Components Cleaning – Overview
R-5000 series Refrigerants – Overview
Refrigerant Recovery/Recycling/Reclamation
U.S. EPA’s Significant New Alternatives Program (SNAP)
ODS-free Drinking Fountains
ODS-free Non-flammable Contact Cement ODS-free Product Substitute for Adhesive EA 9446
ODS-free Computer Keyboard Duster Products
ODS-free Substitute for Ink Cleaner
ODS-free Liquid Carburetor Cleaner
ODS-free Tubeless Tire Repair Kit
ODS-free Lubricant/Anti-seizing Compound
ODS-free Degreasing/Cleaning
Motor Vehicle Air Conditioning Refrigerant Conversion from CFC 12 to HFC-134a
Motor Vehicle Air Conditioning Refrigerant Alternatives
ODS-free Sterilization
Ethylene Oxide Sterilizer Alarm Systems
ODS-free Skin Refrigerant
ODS-free Substitute for Insulating foam
Fire Stop Setting Compounds

PAINTING

Dry Filter Paint Booth
Electrostatic Paint spray System
High Transfer Efficiency Paint Spray Systems
Plural Component Proportioning System for Epoxy Paints
Powder Coating Painting System
Unicoat Paint Technology
Waterborne Paint
DEPAINTING

Automatic Paint Gun Washer
Paint Stripping using Sodium Bicarbonate Medium
Carbon Dioxide Blasting Operations
Fluidized Bed Paint Stripper
High and Medium Pressure Water Paint Stripping Processes
Plastic Media Blasting (PMB) Paint Stripping
Degreasing and Paint Stripping using Sponge Blasting
Paint Stripping using Wheat Starch Blasting

PETROLEUM, OIL, AND LUBRICANTS

Used Oil Segregation and Storage
On-Site Recycling of Used Oil
Off-Site Recycling of Petroleum Base Hydraulic Fluid
Off-site Heat Recovery of Waste POL
Substituting Synthetic Oil for Conventional Oil
Permanent Filter for Vehicle Motor Oil
Bypass Filter for Vehicle Motor Oil
Oil Filter Crushing
Lubricant Analysis Programs
Substitute Lubricants (Non-Lead, Non-Ozone Depleting Substances)
Extension of Metal Working Fluid Service Life
Semi-synthetic and Synthetic Coolant Substitution
Antifreeze Recycling (On-site and Off-site)
Substitution and Recycling of Aircraft Deicing Products

SOLID WASTE MANAGEMENT

Corrugated Cardboard
Aluminum Cans
Steel Cans
Glass
Metal and Plastic Drums
Fluorescent Light Tubes and High Intensity Discharge Lamps
Diapers
Clothing and Household Items
Food Waste
Construction and Demolition Waste
Collection Containers
Recycling Trailers
Balers
Aerosol Can Puncturing and Crushing
Glass Pulverizers
Metal Drum Crushers
Concrete/Asphalt Crushers
Backyard and Small Scale Composting
Windrow Composting  
Aerated Static Pile Composting  
In-Vessel Composting  
Vermicomposting  
Tub Grinders  
Paper Shredders  
Trommel Screens  
Compost Mixers  
Front-end Loader  
Windrow Turners

**SOLVENT ALTERNATIVES**

Cleaning and Degreasing  
Paint Removal  
Rust, Corrosion, and Heat Scale Removal  
Carbon and Carbonaceous Deposit Removal  
General Metal Cleaning  
Emulsifier for cleaning bilges  
Electronic and Electrical Equipment Cleaning  
Fiberglass Surface Preparation and Epoxy Resin Cleaning  
Surface Preparation – Welding and Painting  
General Surface Preparation  
Paint Removal and Painting Clean up  
Rust Stain Removal  
Flight Deck Cleaner  
Corrosion Removal – Potable and Non-Potable Systems  
Engine Degreasing  
Surface Preparation Prior to Painting/Bonding/Adhesive  
Ink Removal  
Automotive – General Applications  
Cleaning Prior to Sealing  
Aircraft – Skydrol Removal  
General Aircraft Cleaning  
Corrosion Inhibitors  
Chemical Cleaning as a Solvent Alternative  
Immersion soaking  
EPA’s Solvent Alternatives Guide – SAGE 2.1  
Solvent Recycling  
The Clean-In-Place (CIP) Method to Reduce Hazardous Waste  
Steam Cleaning as a solvent Alternative  
Mechanical Cleaning Processes as a Solvent Alternative

**WASTEWATER**

Bilge and Oily Wastewater Treatment System (BOWTS)
Biological Aqueous Wastewater Treatment System
Recycling Wash Water Using Closed Loop Wash Racks
Electrolytic Recovery Technology for Silver Cyanide Recycling
Hydroblasting Wastewater Recycling System
Laser Reduction of Toxic Organic Compounds in Wastewater
Peroxide Advanced Oxidation Wastewater Treatment
Powdered Activated Carbon Wastewater Treatment
Precipitation and Microfiltration Wastewater Treatment Systems
Recycling Activated Carbon
Reverse Osmosis and Ultrafiltration Wastewater Treatment Process
Secondary Use of Acids and Alkalis for Wastewater Treatment

**STORM WATER**
Infiltration Trenches for Treating Storm Water Runoff
Sand Filters for Treating Storm Water Runoff
Vortex Solids Separators for Treating Storm Water runoff
Water Quality Inlets to Control Storm Water Runoff
Wet Detention Ponds to Treat Storm Water Runoff