
CASE STUDY: U.S. Coast Guard Support Center

Location:	Elizabeth City, NC (Pasquotank County)
Industry:	Aircraft Servicing and Repairing (SIC: 4581)
Pollution Prevention Application:	Water Conservation, Hazardous Waste Reduction, Solvent Substitution, Hazardous Material Inventory
Annual Savings:	\$97,000
Payback Period:	Immediate
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Background

The Coast Guard Support Center at Elizabeth City, NC, is one of the largest Coast Guard bases in the United States. The 822 acre complex is home to five commands: Support Center Elizabeth City, Air Station Elizabeth City, the Aviation Technical Training Center, Boat Station Elizabeth City, and the only Aircraft Repair and Supply Center in the Coast Guard.

The Support Center is vital to the Coast Guard aviation effort. Numerous Coast Guard air missions, including major search and rescue operations, are launched regularly from the facility. One of the primary missions of the base is the overhaul, modification, and repair of nearly all Coast Guard rotary and fixed-wing aircraft. The industrial nature of the aircraft rework mission has historically resulted in the generation of significant quantities of hazardous waste.

Waste Reduction Activities

The Pollution Prevention Committee was established in 1994 and has representatives from each command on the complex. The Committee provides a networking resource to discuss and share ideas that lead to the development and implementation of waste reduction strategies. Since its inception, the P2 Committee has instituted many innovative process changes that have helped to create an excellent hazardous waste management and pollution prevention program.

In April 1996, the Pollution Prevention and Opportunity Assessment plan (P2OA) was adopted. The P2OA was an ambitious effort to pursue aggressive waste reduction strategies throughout the Support Center complex. The goal of the plan was to reduce hazardous waste generation to less than 56,000 pounds by the end of 1999, a reduction of more than 50,000 pounds from the historical average.

In 1997, the Support Center undertook a base-wide project to install an innovative metals removal and water recycling system that has virtually eliminated hazardous waste from the largest waste generation process on the facility. The Metals Processing Shop performs various metal processing operations, including cleaning and treating of metal parts by immersing them into various chemical solutions.

The shop contained several active water rinses. During each 8-hour shift, 3500 gallons of potable water was supplied to each rinse tank through an open valve, generating 875,000 gallons of industrial wastewater per year. Annual cleaning of the tanks required all liquids be disposed as hazardous waste.

The new treatment system recycles process water and chemicals through cation and anion exchange resin filters. This system eliminated the discharge to the sewer from the Metals Processing Shop, so the Support Center no longer meets the definition of "Industrial User" as defined in the Clean Water Act. This eliminated the need for a state approved pre-treatment permit. A new, locally managed permit with reduced monitoring requirements is currently under development.

The Support Center has also converted all but one parts washer to cyclonic filter systems, or switched to less hazardous aqueous-based solvents.

The implementation of a pharmacy approach to hazardous materials distribution has also provided a significant reduction in the amount of hazardous waste generated by hazardous materials that have exceeded their shelf-life.

Waste Reduced

- The metals treatment system, by extending solution bath life, has reduced hazardous waste generation by 44,000 pounds (a 56% reduction in the basewide total), and reducing water consumption by 875,000 gallons.
- Parts washer modifications and solvent replacement reduced solvent-based hazardous waste by 7500 pounds (a 40% reduction).
- The hazardous materials pharmacy, along with shipment of limited amounts of expired hazardous materials to Marine Corp Air Station at Cherry Point for reuse by other government agencies, has reduced the hazardous waste stream from expired hazardous materials by 12,254 pounds. This represents an 80% decrease in this category of waste in just one year.

Annual Savings

- The metals treatment system has saved over \$86,000, based on \$55,000 in disposal costs, \$24,000 in monitoring costs, and \$7,000 in water utility charges.
- Solvent substitution and parts washer conversion produced savings of over \$11,000 in hazardous waste disposal fees.

Total cost savings are \$97,000 per year.

Other Activities

The Coast Guard Support Center was recognized as a Federal Government Case Study in the 1997 Governor's Award for Excellence in Waste Reduction competition.