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## Pollution Prevention

**Governor's Pollution Prevention  
Award Recipient  
Crown Equipment Corporation**

The company-wide plan to reduce waste has resulted in a substantial benefit for the environment and the company.

**Governor George V. Voinovich**

The Governor's Awards for Outstanding Achievement in Pollution Prevention have been presented since 1986. Crown Equipment Corporation was one of seven recipients to receive the Award in 1992. The sixth annual awards were presented in the Cabinet Room of the Statehouse on October 13, 1992, by Governor George V. Voinovich. These awards are designed to recognize outstanding commitment to improve Ohio's environment through pollution prevention. Evaluation criteria included: the overall effort to reduce waste at the source, recycle or recover materials, or conserve energy; soundness of approach; cost-effectiveness; ability of the program to serve as a model for others; and effectiveness in promoting prevention as the preferred long-term approach.

**What is Pollution Prevention?**

Pollution prevention is the use of source reduction techniques to reduce risk to public health, safety, welfare and the environment and, as a second

preference, the use of environmentally sound recycling to achieve these same goals. Pollution prevention includes waste minimization, avoids cross-media transfers (of wastes and/or pollutants), and is multi-media in scope, addressing all types of waste and environmental releases to the air, water and land.

**Crown Equipment Corporation**

Crown Equipment Corporation, New Bremen, Ohio, was recognized for a comprehensive pollution prevention program. Crown is a manufacturer of electric lift trucks and antenna rotators. Crown's facilities include five manufacturing plants totalling over 500,000 square feet and two office buildings consisting of 80,000 square feet. Crown employs approximately 1650 people.

**Pollution Prevention Activities**

Crown has been dedicated to reducing environmental risks for many years and has implemented a variety

of source reduction and recycling activities. Between 1987 and 1991 Crown removed methyl ethyl ketone, methylene chloride, toluene and 1,1,1-trichloroethane from its cleaning and degreasing operations. The use of solvents in operations has been virtually eliminated. The use of 1,1,1-trichloroethane in 1988 was 108,000 pounds. Elimination of this solvent exceeded Crown's goal outlined in its commitment to the U.S. EPA's 33/50 Program. Crown has improved employee safety and improved environmental quality by eliminating this ozone depleting chemical. This goal was accomplished by changing the degreasing equipment to water-based cleaning solutions. The process change cost Crown \$78,000 initially, but now saves the company over \$103,000 annually.

In painting operations, lead and chromium have been removed from most paint formulations, eliminating paint waste as a hazardous waste stream. Paint sludge is now recycled into building materials such as

quarry tile, asphalt, mastic and binder. In 1985, Crown began recycling machine coolant. Approximately 90 percent of the 160,000 gallons of coolant used annually is recycled, saving the company over \$65,000 annually.

Crown also has been active in solid waste recycling. Waste plastic is reground and reintroduced with virgin material into the injection molding operations. This results in the recycling of 40,000 pounds of plastic annually. Over 5,000 tons of scrap metal is recycled annually. This effort results in substantial savings for the company. As part of the scrap metal program, waste shot blast dust, an iron pellet dust, is recycled from a baghouse collection system. This action prevents disposal of over 24 tons of waste iron dust annually.

Several thousand pounds of cardboard per week are recycled, reducing landfill tonnage by 20 to 25 percent. A \$10,000 baler was purchased to facilitate this effort, and now \$7,500 is saved annually. All styrofoam packing material is collected from the



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receiving department and reused in Crown's shipping department. An inexpensive vacuum system was purchased to collect the styrofoam from incoming packages and deposits it into large plastic bags for transport to the shipping department. This project has drastically reduced the amount of packing material which must be purchased. Crown also purchases recycled styrofoam from local recycling centers for reuse.

Crown has actively shared this information with others. It has promoted its coolant management plan to industries in Auglaize, Allen and Montgomery counties. Representatives from local industries have toured Crown's facilities to learn firsthand the waste reduction techniques and process changes Crown has implemented. Several groups have examined the coolant management plan in action. Crown also acted in a leadership role in the formation of an Industrial Council to study waste reduction and recycling, displaying its dedication to teaching others how to reduce waste without sacrificing production. It has also developed literature and given slide presentations in Auglaize County.

Waste wood has been almost entirely eliminated from Crown's waste stream. Used pallets are either repaired for reuse or are sent to a pallet reconitioner. Unusable waste wood is sent to a composting facility where it is composted and eventually resold as garden mulch.

### Looking Ahead

Crown is continually undertaking pollution prevention activities. Two projects have been identified as viable steps in eliminating the generation of solid and hazardous wastes. The first project involves painting operations. Crown will eliminate chromium from paint formulations to render wastewater non-hazardous. It also will initiate the separation of solids from the water, allowing re-use of the water. By implementing solids removal and secondary drying, the non-hazardous paint solids can be sent to a waste paint recycler. This eliminates the waste, saving over \$23,000 per year.

Increased use of water-based cleaners as replacements for organic solvents has expanded the amount of oily wastewater that must be evaporated or sent out for disposal. By

initiating treatment of the water-based cleaners, Crown hopes to re-use the water and cleaning chemicals. By eliminating an operating wastewater evaporator, gas costs can be reduced, resulting in energy savings. This project will eliminate 32,000 gallons of oily wastewater and save an estimated \$12,000 annually.

Crown's extensive efforts have earned them well-deserved recognition. The State of Ohio and Ohio EPA applaud their efforts and encourage others to meet or exceed their high standards.

### For More Information:

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**This is the twelfth in a series of fact sheets Ohio EPA has prepared on pollution prevention. For more information, call the Office of Pollution Prevention at 614/644-3469.**

**The Office of Pollution Prevention was created to encourage multi-media pollution prevention activities within the state of Ohio, including source reduction and environmentally sound recycling practices. The office analyzes, develops, and publicizes information and data related to pollution prevention. Additionally, the section increases awareness of pollution prevention opportunities through education, outreach, and technical assistance programs directed toward business, government, and the public.**