

WMRC

Waste Management
and Research Center



2006 Illinois Governor's Pollution Prevention Awards

October 25, 2006

2006 Governor's Pollution Prevention Awards

For the past 20 years, the Illinois Waste Management and Research Center (WMRC) has worked with the Illinois Governor's office to recognize outstanding pollution prevention efforts in our state. These annual awards are presented to businesses and organizations in Illinois that have successfully reduced the generation of gaseous, liquid, and solid waste. This year 24 Illinois companies and organizations are being honored for their achievements in helping the environment and the economy. Categories in the Governor's Pollution Prevention Awards include industries of all sizes, vendors/suppliers, educational institutions, service organizations, and continuous improvement companies.

The Pollution Prevention (P2) projects honored this year saved the companies and organizations millions of dollars in material and disposal costs. The companies and organizations also prevented hundreds of tons of waste materials from being released into the environment and saved millions of gallons of water from being sent to treatment facilities.

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Innovate Illinois Award

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Chem Processing, Inc. Rockford



(CPI), is a comprehensive metal finisher. CPI worked with the Illinois Manufacturing Extension Center and the Illinois Waste Management and Resource Center on a waste and water reduction project for CPI's wastewater treatment system. Out of this collaboration, two project ideas were developed – adding a reverse osmosis wastewater stream to the water softening system, and the segregation of the phosphating process wastewater. Due to these projects, CPI will save 900,000 gallons of water and 9000 square feet of hazardous sludge every year. Together, these projects will save CPI \$5,300 a year.



PortionPac Chemical Corporation Chicago



PortionPac Chemical Corporation, Chicago, manufactures products to the industrial cleaning market. Its product design and distribution method are designed to reduce the size of formulations, eliminate overuse of chemicals, provide incentives to use less product, and recycle containers. In 2005,

PortionPac committed to two programs to help track and codify environmental policies.

Through these programs:

- Chemical formulations were modified to reduce harmful materials resulting in a reduction of air and water pollution.
- Modifications were made to packaging.
- A management program for developing sustainability in all aspects of the business was implemented.



Spraylat Corporation Chicago



Spraylat is a manufacturer of specialty coatings. The company implemented programs that saved over \$58,000 and reduced emissions by an estimated five tons per year. Production waste generation was reduced nearly 50% per unit of production. The projects included:

- Switching from rags to wipes, which allowed for more efficient cleaning and reduced waste.
- Use of an Eco-Filter to replace filter bags, which saves time, material, and waste.
- Reusing wash solvent has reduced liquid waste volumes nearly 25%.
- New grinding media in the mills significantly reduced processing time, allowing increased production, and reduced chemical use.

Consolidated Printing Co., Inc. Chicago



Consolidated was one of the first Illinois Great Printers, a designation awarded for its efforts to reduce wastes. Some of Consolidated's recent improvements include:

- switching to chemical free processor-less plate making;
- switching to zero Volatile Organic Compounds (VOC) paints and varnishes and solvent-free vegetable oil based inks;
- installing recycled carpeting, ceiling tiles, formaldehyde free insulation, and mercury-free lights and ballasts;
- using linseed oil press blanket washers; and eliminating the use of silver in their processes.

Farmland Foods, Inc. Monmouth

In 2005, Farmland Foods switched the coolant used to cool facility air compressors from water to ethylene glycol. A cooling tower allows the reuse of glycol minimizing material use. This reduction of water usage reduces the demands on the water supply, which helps the City treatment plant stay within its permitted flows during Farmland's expansion. This project has eliminated a water usage point and has reduced facility wastewater effluent by approximately 86,000 gal per day.

The combined Water/Wastewater cost reduction saved Farmland Foods \$60,112 per year. The use of glycol for cooling air compressors and reducing water is a first for a Farmland facility.



Illinois Department of Military Affairs Springfield

The Department of Military Affairs directs and provides support services to the Illinois National Guard. DMA's Environmental Branch has done P2 assessments at several National Guard facilities and has implemented a pollution prevention program and an Environmental Management System. DMA has installed aqueous parts washers with ultra filtration membrane systems, which has extended the life of parts cleaning chemicals from three months to several years. DMA also has developed and installed an automated weapon cleaning system that uses ultrasonic cleaning combined with aqueous cleaners and ultrafiltration to extend the life of the cleaners. This system has resulted in an annual reduction of 540 gallons of hazardous wastes. DMA also implemented a scrap metal recycling program, began using a detergent free vehicle washing system, and started using solvent paint gun cleaners that include solvent distillation systems in their vehicle painting operations.

CITGO Lemont

The CITGO Lemont Refinery implemented a flaring reduction project, which was intended to eliminate sources to the flare system. The project team successfully identified and eliminated some of the major flare sources, which reduced certain emissions by 76% and produced a large energy savings. The company also replaced burners on three of its largest process heaters, resulting in an 80% reduction in certain emissions and a five percent improvement in burner efficiency. The plant undertook a leak detection and repair project, which reduced estimated annual VOM emissions from 109.0 tons in 2000 to 9.2 tons in 2005. Finally, the plant reduced the amount of benzene in its wastewater by over 75% through an improved in-line sampling plan, source elimination, process improvements, and operator training. Additional benefits of this change include recycling and reuse of petroleum-based wastes, and reduced load to the wastewater treatment plant.

Finishes Unlimited, Inc. Sugar Grove



Finishes Unlimited, Inc. is an employee owned industrial paint manufacturer. The company develops and manufactures EPA compliant water reducible bake enamel and air-dry coatings, which it supplies to industrial users. Users of compliant water reducible coatings significantly lower their volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions, and the amount of hazardous waste generated from the coating operation. In 2005, Finishes Unlimited, Inc. converted three Illinois companies to water reducible VOC compliant coatings. These companies reduced their VOC emissions by 70%, or 27.87 tons, and HAPs emissions by 100%, or 9.7 tons. These companies also realized paint and disposal cost savings of over \$200,000 per year. By producing only



water reducible coatings Finishes Unlimited, Inc. has increased the safety in its own plant.

Pontiac Township High School Pontiac

Pontiac Township High School (PTHS) implemented a Crayon Recycling Program operated by students. The project incorporates the design and education of the high school students and combines it with the energy and enthusiasm of the area grade school students. The PTHS Ecology students develop receptacles made out of reused, decorated five gallon buckets; educate the fifth grade students of the need to reduce, reuse, recycle; and help the fifth graders to teach the rest of their schools the need to recycle crayons. For several years, the ecology class has operated a program designed to educate the community about storm water pollution by stenciling the message, "Dump no waste - Drains into our Vermillion River" on each of the storm drains. The students also created and distributed fliers and submitted articles to local newspapers to educate the community about storm water pollution.



Lansing Cleaners Lansing

Lansing Cleaners in 2005 replaced its last remaining Perc machine with a dry cleaning machine using an environmentally friendly solvent. This machine eliminated the use of a highly regulated chlorine based solvent, and lowered energy costs. This resulted in greater efficiency, while producing a superior product for Lansing's clients. Lansing also has installed LED lighting systems that are 90+ efficient, lowering its electrical consumption and demand for secondary lighting for its facility. The



cleaner also installed instantaneous hot water systems to eliminate the typical hot water tank system. Finally, Lansing increased its fleet of natural gas powered trucks from five to eight. This allowed the company to lower its use of gasoline and its harmful emissions while increasing the engine life of its trucks.

R.B. White, Inc.

Bloomington

R.B. White is a sheet metal fabrication facility. In 1997, R.B. White began using a new state-of-the-art powder coating system. Since then, the company has prevented a total of 225 tons of potential VOC emissions through the switch to powder coating. This powder coating conversion:



- reduced worker exposure to harmful solvents;
- improved transfer efficiency, recovery, and reuse of overspray;
- and provided superior finish with greater durability and improved corrosion resistance.

Another benefit of the powder coating system is reduced energy usage. The currently used powder curing process uses convection heating at a savings of as much as \$15,000 per month. Implementation of the powder coating system has enabled R.B. White to expand its business to other companies.

GE Healthcare

Arlington Heights



GE Healthcare is a manufacturer of radiopharmaceuticals. In 2005, GE Healthcare implemented energy conservation, water conservation, and waste reduction projects. By ramping down power to critical manufacturing equipment during scheduled idle times, an estimated total of 938,054 Kilowatt hours a year will be conserved. The energy savings is equivalent to the annual electrical consumption of 40 single family homes (\$51,500). The use of

polystyrene packaging material was discontinued in favor of an air filled recyclable material. This freed up an estimated 18,000 cubic feet of sanitary landfill space and saved GE Healthcare customers an estimated \$13,000 per year. A multifunctional team from the Arlington Heights site provided also provided guidance and expertise to its satellite facility in New Jersey on a project, which reduced wastewater effluents by 48%.

Abbott

Abbott Park



Abbott is a health care company that manufactures and markets medical products. The company undertook the following projects:

- The use of methanol, a Hazardous Air Pollutant, was eliminated in an antibiotic manufacturing process. This resulted in a 95% reduction of HAP emissions, the elimination of wastewater generation, and a saving of \$108,000.
- Compressed air leaks were fixed throughout the facility resulting in a 2,168,000 kWh/yr energy reduction, a CO₂ emission reduction of 2.5 million pounds per year, and annual savings of \$106,000.
- Disposable apparel was replaced with reusable clothing, resulting in the diversion of 12,500 lbs of waste from a landfill each year and a savings of \$168,600.
- Reducing the frequency of a purified water flush resulted in a reduction of 353,600 gallons of water and a savings of \$17,672.



ITT Corporation

Morton Grove

ITT Corporation, Morton Grove switched from a solvent based paint to a waterborne paint. It is estimated that this change will save the company \$160,000 a year and will eliminate the need for any extensive EPA Title V reporting. The company has reduced its potential air emissions by over 60%.

By eliminating the used paint waste solvent, the company is now able to send paint filters and associated waste to a regular landfill, eliminating the need for specialized waste disposal. The company's status will go from a large quantity waste generator to a small quantity generator, and it will drastically reduce the fire and explosion risks. The change is healthier for employees, as exposure concentrations have also been significantly lowered due to spraying a much less volatile paint that is HAPs free.

Gates Corporation Galesburg



Gates mixes slab rubber stock for five other Gates hose manufacturing facilities. Recent pollution prevention projects include:

- A replacement project in the Carbon Black Handling system that has saved \$280,000 per year, reduced waste to the landfill, improved raw material usage, and lowered maintenance costs.
- Certain process cleanout materials are now used once and then incorporated into the finished product – resulting in a \$28,000 per year savings.
- Improved controls and automating in the cooling tower have saved an estimated three million gallons of water per year.
- Lowering the boiler steam pressure, using low-melt raw materials bags to reduce landfill waste, selling all pallets to a local metal manufacturing plant, and obtaining incoming raw materials in either bulk or returnable containers.

Nestle' USA Jacksonville



Nestle' USA manufactures and packages Coffee-mate®. Environmental projects in 2005 that resulted in a combined estimated savings of \$250,000 include:

- A tank farm water use reduction project was initiated to

conserve water and reduce effluent. Timers were installed on all wash stations to reduce the chance of operator error in leaving on water hoses.



- Variable Frequency Drive (VFD) units were installed on two cooling towers and an air compressor to control motor speed and reduce energy use.
- Ultrasonic detection devices were purchased to aid in identifying and repairing steam leaks.
- During plant “shut down” the chilled water temperature is raised for energy conservation.
- Tank car condensate was previously dumped into the sewer. All condensate returns are now piped to a recovery tank and reused in the boiler.

Caterpillar Inc. - MEC Mossville



The Mossville Engine Center (MEC) has changed to a greener packaging technology, with a focus on increasing profitability and social responsibility. The company worked with suppliers to eliminate waste associated with cardboard, plastic, and plywood packaging. These changes range from switching to re-usable plastic tubs from cardboard and metal tubs, to the entire re-design of a gear tray that allows ergonomic assembly and recycling of the plastic tray. Continual savings were achieved through material price reductions and waste volume reduction. Total savings for 2005 equaled \$1.7 million, while total waste volume reduction was nearly 1.2 million pounds. The project has resulted in environmental benefits of reduced landfill burden, reduced material prices for Caterpillar, increased supplier efficiency, and significantly impacted employee health and safety through improved assembly line ergonomics.



Cardinal Health McGaw Park



Cardinal Health provides health care products and services. The company instituted a project to reduce its packaging by five percent, or 3.2 million pounds. This goal was met early, with results that were over the target goal. Employees throughout Cardinal Health participated by generating ideas, documenting improvements, and helping with experiments that were necessary to implement changes to these medical packages.

Cardinal was able to implement a reduction of over 3.328 million pounds of packaging materials annually, with an additional 554,000 lbs of waste reduction identified in pending projects. Projected cost savings are \$4.7 million annually and a potential for additional savings that could total \$1.4 million with on going projects.



Continental Tire North America (CTNA), Mount Vernon

CTNA manufactures radial tires. The company is ISO 14000 Certified and views pollution prevention as one of its core business practices. CTNA decreased the volume of its waste sent to landfill by 7.3 million pounds in 2005. CTNA now recycles 71% of all of the waste and by-products that are generated at the plant.

Continental Tire North America also conserves resources through re-processing a variety of rubber components. Other project resulted in plant lighting being modified to reduce energy usage by 50%, natural gas consumption was reduced by 3.5%, and water usage was reduced by 5%.

Harris Corporation's Broadcast Communications Division (BCD) manufactures radio and television transmitters. BCD's pollution prevention projects included:

- Design of a closed loop cooling water system to eliminate cooling water discharges;
- Recovery of process heat for use to pre-heat incoming city water to heat two metal finishing rinses and aid in the heating of the facility and drying of parts;
- Implementation of spray guns to increase material transfer efficiency and reduce annual paint filter disposal costs;
- Reducing the toxicity of materials used in the manufacturing process;
- Replacing a traditional parts washer with a virtually waste-free unit;
- Upgrading a variety of facility lighting applications to reduce energy and improve lighting.

St. Joseph's Hospital Breese

St. Joseph's Hospital has transitioned its medical imaging from film to digital viewing. This eliminates the need for costly film and decreases use of valuable natural resources such as silver.

St. Joseph's also identified a vendor to recycle corrugated cardboard, preventing 50,400 pounds of cardboard from entering the landfill in 2005. Additionally, 2,000 pounds of "junk mail" and 1,755 pounds of desk paper were recycled. Medical waste was reduced through the acquisition of a special washer for surgical suction canister content disposal, and through employee education. Styrofoam utilization was decreased by 83% through replacement with reusable products. The hospital donates used or outdated medical equipment to mission programs



rather than placing it into the waste stream and has projects for battery, aluminum, and other paper product recycling. Additionally, the hospital screens new products for mercury content prior to purchase.



International Truck & Engine Corporation Melrose Park

International Truck & Engine Corporation produces diesel engines for mid-sized trucks and school buses. This plant is one of the first diesel engine manufacturers in North America to be ISP 14001 certified. In 2005, the company modified its engine testing system to recover and reuse the fuel flushed out of its test engines. Because of this process change, International reused 35,510 gallons of fuel, resulting in an annual savings of \$168,170 in waste disposal costs. Last year, International also saved more than \$500,000 through its Reduce, Reuse, and Recycle efforts.



Sarah Bush Lincoln Health System Charleston



**SARAH BUSH
LINCOLN**
HEALTH SYSTEM

Sarah Bush Lincoln Health System (SBLHS) is located between Charleston and Mattoon. SBLHS established a committee to examine ways to improve the organization's conservation efforts. Working with local and state officials, the company identified steps needed to establish long-term and sustainable pollution prevention efforts.

SBLHS conducted a building energy audit and waste audit. The organization installed upgraded lighting bulbs and fixtures with

more efficient models and recycled cardboard. These steps resulted in substantial savings, which Sarah Bush Lincoln Health System can direct to healthcare priorities in the community. SBLHS continue to identify alternative environmentally responsible products for use and is exploring utilizing vermicomposting to eliminate food waste.

Innovate Illinois Award

The Innovate Illinois Award is presented to Caterpillar's Mossville Engine Center for its Advanced Combustion Emissions Reduction Technology (ACERT). ACERT recovers exhaust energy through series turbo charging and uses the energy to manage airflow into the combustion chamber with an electronically controlled variable intake valve. The fuel system allows for multiple injections throughout each combustion cycle; small amounts of fuel are injected at precise times to achieve the combined goals of fuel economy and lower emissions.



This optimization translates into air pollution prevention, energy resource conservation, and a cost savings for every ACERT engine customer in Illinois and throughout the world. In future years, ACERT will save businesses and residents over \$201 million over the life of the engines sold in Illinois. The technology also translates into significant pollution prevention to Illinois air, and economic and health benefits to Illinois businesses and residents.

*Pollution is nothing but the
resources we are not harvesting.
We allow them to disperse
because we've been ignorant
of their value.
-- Buckminster Fuller*

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