

Draft – for review submitted by Laura Rauwerda

Preventing Pollution: A Tool to Reduce and Eliminate Persistent Toxic Substances in the Great Lakes Basin

Background

Innovative sustainability requires radical change. Improving the health of the Great Lakes Ecosystem presents challenges that must include the reduction of wastes containing persistent toxic substances (PTS). If a substance is harmful or toxic to a natural system, preventing its introduction into the system is integral to the long-term viability and environmental integrity of that system.

Pollution prevention is a cost effective strategy that can reduce PTSs at the source. If a persistent toxic substance is reduced or eliminated at its source, the long-term capital investment in regulation, control and clean up of that PTS is also reduced. Often pollution prevention efforts impact multiple toxic substances and result in synergies that positively impact the natural environment, economic growth and equitable social conditions at the same time.

Pollution prevention (P2) requires individual and collective action, continuous improvement, and taking ownership and responsibility for its implementation and growth potential. By creating an atmosphere of collaboration, shared value, and applied problem solving, P2 is able to influence the management of PTSs for municipalities, industries and individuals by:

- Reducing treatment, transport, and disposal costs.
- Minimizing compliance issues and cost associated with regulated wastes.
- Reducing future liability through reduced risks to workers, communities, and the environment.
- Avoiding costs of accidents and spills.
- Improving production times.
- Enhancing public image and community relations.

Examples of successful P2 practice in the Great Lakes Basin include a variety of programs such as Household Hazardous Waste Collections, Tribal Burn Barrel Strategies, Pesticide Cleansweep Programs and Mercury and PCB Reduction . The 1990's resulted in several Great Lakes States and Canada taking action to eliminate sources of PTSs. Mercury, for example, is present in a wide variety of consumer products. By targeting specific sources of use, such as schools, hospitals, end-of-life automobiles and dental offices, elemental mercury is being removed from the waste stream and replaced with alternative raw materials. For example, in 2000 New York reported a reduction of 505

lbs. of elemental, free flowing mercury recovered from auto switches bound for crushing and shredding operations. In 2004, Michigan reported collecting 8,187 mercury containing devices from households, school laboratories, doctor's offices and clinics reclaiming 621 lbs. of mercury.

Current and Future Considerations

As the global market for manufactured goods becomes more competitive, improved efficiency in the use of natural resources is integral to a sustainable economy and society in the Great Lakes Basin. Waste reduction and the elimination of potentially harmful substances in the design of products is now becoming a dominant principal in how things are made. Performance indicators that include environmental and social impacts are beginning to define, rate and hold corporations accountable and responsible for their actions. Corporate Social Responsibility (CSR) performance is an excellent indicator of management quality and is a driver of stock returns. CSR is challenging companies to work with other stakeholders to achieve system change.

Programs such as Environmental Management Systems, Green Engineering, Green Chemistry, Design for the Environment, Environmentally Preferred Purchasing and others are shifting the paradigm of historical support for unsustainable, independent practices to one of interdependence and shared values. The cyclical use of materials and the targeting of specific toxic chemicals for replacement are now being considered as a valuable component of new product development by companies. Defining materials flows is resulting in the creation of products designed to be recycled. Service oriented programs are also being created to take back product at the end of use so raw materials can be recovered and reused for new or different products. The use of alternative fuel and energy sources is also considered a marketable indicator in new the Green Label Initiative.

The waste reduction and elimination models now being practiced in some industries provide a new vision for all stakeholders in the Great Lakes Basin. If we consider that in all natural systems, waste equals food, ecosystem sustainability is an easy concept to grasp. Innovative solutions through strong partnerships is what it will take to finally recognize that in both, human and natural systems, sustainability is an outcome of relationships among the parts.

References

New York State Department of Environmental Conservation, "Automotive Mercury Switch Collection and Recycling Project," 2000

Michigan Department of Environmental Quality, "Mercury Report," 2004

Ehrenfeld, John R., "Searching for Sustainability: No Quick Fix," Reflections, The SoL Journal on Knowledge, Learning, and Change, vol. 5 no. 8, 2004

Dixon, Frank, "Total Corporate Responsibility: Achieving Sustainability and Real Prosperity," Ethical Corporation Magazine, December, 2003

Braungart, Micheal, "Eco-Industries Model Nature's Bounty," Future Vision, Sep-Oct 2004

