



GEMI®

Collecting the Drops:

A Water
Sustainability
Planner

Case Example

Eastman Kodak Company: Changing Manufacturing Operations and Exceeding Water Conservation Goals

Kodak is the world's foremost imaging innovator, providing leading products and services to the photographic, graphic communications and healthcare markets. The 1,300-acre Kodak Park facility in Rochester, New York, supports nearly half of Kodak's worldwide production of imaging materials. Manufacturing processes require an infrastructure of water and wastewater treatment facilities, their own water supply and sewer lines, and two electricity- and steam-generating power plants to provide their utility needs.



Kodak Park: City within a city

Water conservation in a water-intensive industry. Photographic chemical-, film- and paper-making processes are water intensive by their nature. Including power plant needs, water consumption at Kodak Park amounted to an average 33 million gallons per day in the baseline year of 1997. In 1999, senior company management established a series of worldwide environmental goals for the entire company, to be achieved over the next five years. In particular, Kodak established a goal of requiring a 15 percent reduction in water usage by year-end 2003. The targets were applied worldwide, but each manufacturing site was measured on its individual achievements. By year end 2003, Kodak had driven water consumption down by 34 percent when compared to the 1997 baseline. Continuous improvement, which is a core principle for Kodak, reduced water use by over 50 percent by year end 2005, when compared to the 1997 baseline and no- or low-cost solutions.

Genesis of the conservation effort. Initially, a small team was formed at Kodak Park to promote water conservation and to collect data on where and how water was used. By applying Six Sigma quality improvement tools, this team identified a number of reduction opportunities. That team was expanded to include representatives from every major department in the facility, which facilitated the completion of a number of minor projects. Sub-teams in many departments took charge of local project identification and execution. The expanded team also persuaded a number of departments to include water usage on their operational performance matrices. Data on water usage was collected on a monthly basis, and departments received feedback in the form of Pareto and trend charts. Constantly measured upon usage against a 1997 baseline, departments actively sought ways to cut back on consumption.

Benefits of water conservation. The cost savings realized by implementing these ideas demonstrated that conservation had not only an environmental benefit but a financial advantage as well. More than 60 percent of the water consumed by Kodak Park is used in cooling applications, either directly in manufacturing processes or in utility cooling towers that support manufacturing. Therefore, some of the largest savings come from finding re-use opportunities for single-pass cooling water and by ensuring that steam condensate is returned to the powerhouse rather than to the sewer. An early success for the program involved the installation of a closed-loop chilled water system to replace single-pass-process

Eastman Kodak Company: Changing Manufacturing Operations and Exceeding Water Conservation Goals (Cont.)

vessel cooling. Significant savings were also realized by optimizing control and by repairing or replacing valves.

Kodak also learned that many smaller projects could be leveraged to good effect. For example, in one building, a faucet over a sampling sink had been kept running 24 hours per day to prevent blockage of the sink's drain. Due to this continuous use, it was consuming over 1.5 million gallons of water per year. Re-plumbing the lines so that the sample flows would not block the sink allowed the clean water faucet to be kept closed. This resulted in immediate savings.