Case Example

Eastman Kodak Company: Water Management in Mexico: Recycling, Reuse and Zero Discharge

Not long after the Eastman Kodak Company built the sewer system and the wastewater treatment facility for a plant in Mexico in the mid-1990s, the company decided to implement a wastewater reduction program at the site. Initially, this project was investigated as part of Kodak's continuous commitment efforts to conserve and protect our natural resources. But the business case for the potential savings soon became a significant driver.

The project was approved based on environmental benefits as well as a positive return on investment, which included the savings of the cost of water and municipal fees, which were expected to be quite attractive. A critical barrier to overcome at that time was working with the government, since Mexico is the owner and provider of water. The fee charged for water is a given cost—in 2006, $1.1 (USD) per cubic meter—if pumped out from wells. There is also a fee to discharge at the municipal sewer, which is 33 percent of the cost of water, along with an additional percentage based on the biochemical oxygen demand (BOD) levels. The water conservation efforts that Kodak was implementing decreased the load on the municipal sewer system, freeing up capacity for other users. This helped Kodak reach an agreement with the governmental authorities to exempt the payments for discharge and BOD content. These savings were important in working out the business case for this project.

In 1997, Kodak set up a new zero discharge system designed to filter water coming from the oxidation ditch at the Guadalajara water treatment plant and to reuse the water in the plant's cooling towers. Since the system was put in place, recycled water has been sent to the site's cooling towers and the effluent from the towers used to water grass

The company started work as well on a program to detect and fix all leaks and changed all sanitary equipment to a low-volume discharge. Work culminated in the 2003 installation of a system to collect and use storm water from streets and the roof of one of the facility's buildings (using a 1,000 cubic meter storage tank), resulting in a water savings of about 40,000 cubic meters per year.

Kodak's engineering group, supported by corporate Health Safety and Environment (HSE) services through project development, did most of the work. The Kodak de Mexico HSE committee was a key factor in deploying a culture of water conservation at the site. This effort took six years of continuous work, with minimal financial outlay. Several non-capital improvements were implemented in this stage at the cost of approximately $150,000 and the part-time assignment of three Kodak engineers.

From a baseline year of 1999, this continuous effort to reduce water use allowed the facility to reduce water consumption by 75 percent in 2003, and hold to that approximate level in subsequent years. While some reductions resulted from a partial shutdown, most of the savings came from efforts to reduce consumption, recycle water, and capture storm water for reuse.

In addition to the savings from the reduction in the volume of water used, the plant no longer has to pay a discharge fee to the local municipality. The site also has received an 18 percent cost discount equivalent to volume sent to the water table because of the quality of water used for watering. This yielded an annual savings of about $650,000.