

**How to Improve
Sustainability,
the Process
and
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Each day, the realities of global resource depletion and environmental degradation are at the forefront in the news and in our own minds. Often, it seems that the initiatives that strive for the good of tomorrow mean undue sacrifices today. In addition, they can mean implementing costly systems and complicated procedures that are more restrictive than functional, leaving us with results that are environmentally conscientious but less satisfying in other ways.

The business sector is certainly the first to tangle with the restrictions. Increasing governmental regulations and the public's

mental concerns and adhere to the emerging principals and dictates of sustainability. Qualifying and quantifying the value of these practices can be difficult, but companies like Ridgway are discovering that implementing sustainability practices, when they are pursued with a methodical-ly organized approach, can actually create more efficiency at all levels of the business. In the case of Ridgway's manufacturing, the value of efficiency can even be measured in profits.

"While some organizations choose to meet or beat compliance targets as a way to demonstrate their commitment to sustainability, Dagy's initial challenge was to protect his workers and limit the downside risks of damages, hefty fines, and litigation fees and public relations disasters," explained Nancy Westcott, president of GoatThroat Pumps, which manufactures the award-winning GT Multi-Pump System that Dagy selected to improve his operations.

Ridgway's manufacturing process involved workers tapping and tipping heavy 55-gallon drums and then dispensing the chemicals from leaky spigots into open transfer containers, with additional handling required to transfer the fluids to their point of use. The gravity-fed process involved threading a brass fixture into the small bung in the top of the drum, threading a vent into the large bung, placing the drum on a roll down drum fixture, and tipping the drum into the horizontal position to dispense the chemicals.

Once the drums of chemicals were tapped, workers were still left to deal with the inherent difficulties that gravity-fed spigot systems presented. First, extracting fluid was labor-intensive and awkward. Spigots clogged easily and were difficult to remove. Second, it was difficult to control the flow rate, and the spigots leaked, contributing to spills and fugitive inventory loss. Finally, the spigot system did not allow complete removal of all fluid from the drum, so additional labor and handling were required to empty the drum in compliance with the

Resource Conservation and Recovery Act.

"A chemical disaster was always just one slip-of-hand away," says Dagy. "We've had one too many valves come off, and while they aren't hazardous fluids, the mess, the cleanup, and lost inventory costs in dollars, time for cleanup, and lost production time." Dagy knew the consequences of a spill threatened employees' safety as much as it did his bottom line in terms of inventory waste.

A few close calls prompted Dagy to seek out a new fluid handling solution. Taking cues from the EPA's Information on Process Hazard Analysis, Dagy found a systematic way to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals. Working with his safety manager, Dagy



Ridgway Industries manufactures household and industrial cleaning products.

awareness, knowledge, and concern for living and working in more environmentally responsible ways puts a manufacturer like Brad Dagy, whose production processes at Ridgway Industries involve mixing chemicals, in a bull's-eye of responsibility and accountability.

Ridgway's Story

Dagy's company, Ridgway Industries of Darby, PA, manufactures a product line consisting of household and industrial cleaning products from dish-washing detergents to floor strippers as well as power-washing solutions. All are chemically based.

Often the focus of scrutiny from both the public and regulatory agencies, businesses such as Dagy's are increasingly being required to develop approaches and practices that address immediate environ-

The GT Multi-Pump System solved problems with both the shop's equipment and the manufacturing process.





reviewed the shop's equipment and the manufacturing processes and found that both needed improvement.

Finding a Solution

Dagy came to Westcott with a list of eight fluids, three of which were blended chemicals that were not included in GoatThroat's compatibility guide. To complicate matters, while all fluids were being dispensed from 55-gallon drums, some of the drums were made of steel

'A chemical disaster was always just one slip-of-hand away'

and others were made of plastic with buttress-type fittings. Westcott worked with Ridgway's chemical suppliers, including Dow Chemical which supplied the company with Tergitol and Versene 100, in order to verify the chemical compatibility between each fluid and its respective pump. Proper compatibility would also contribute to maximum pump-life expectancy. Taking all variables into consideration, Westcott provided Ridgway with a complete pumping solution for

every fluid and container situation.

"We understand the challenges that dispensing and mixing chemicals presents to worker safety and environmental compliance, and we spend a lot of time in our pump lab working on how we can help our customers address them," said Westcott.

GoatThroat's simple and efficient pumps work by adding very low amounts of pressure to the vessel, less than 6 psi, to push the fluid out of the drum. A spring-activated control on the tap allows precise control of the amount of fluid being dispensed. The GT Multi-Pump System can safely dispense multiple chemicals directly from their individual upright drums at a rate of 4 gpm depending on viscosity.

All GoatThroat pumps can be outfitted with a choice of four different elastomers — Nitrile, EPDM, Santoprene, and Viton, making them compatible with more than 700 fluids and chemicals including the most commonly used acids, caustics, solvents, and alcohols. When properly outfitted and matched to the fluid, a properly maintained pump will last for 10 years.

With the new system in place, Ridgway's new detergent manufacturing process can transfer fluid chemicals from multiple pumps, utilizing a single shop air-line set at 4 psi. Dagy added a remote tap extension accessory, with five feet of hose, and now his fluids are delivered directly to his point of use and accurately dispensed from a spring-activated nozzle.

Adding the use of the pumps also changed the manufacturing process by saving time and eliminating the dangerous tipping, splashing, spilling, and transporting of open containers of chemicals. An unanticipated benefit is in the pump's ability to empty the drums of chemicals to meet the Resource Conservation and Recovery Act compliant standard, saving additional money when returning the drums to the manufacturer.

In its efforts to improve safety and chemical handling processes, Ridgway has also made significant strides in sustainability through improved worker safety, safer chemical handling, improved pollution prevention, and VOC reduction while providing substantial contributions

to the company's bottom line. The company has been safely and more efficiently pumping chemicals without incident since 2006.



A gravity-fed system with its inherent spills is not environmentally preferable.

For manufacturers, a sustainable business strategy can actually improve the operation at all levels of the company. It has even been suggested that parallels can be drawn between good environmental management practices and good overall management at both the strategic and operational levels. Best of all, companies are learning that cost advantages can result from adopting best practices when the focus is on production processes.

Serving as the precondition for all environmental best practices, process-focused best practices are one of the most basic building blocks in a complete environmentally responsible strategy. And, process-focused best practices can create cost savings faster than other practices. Companies can choose from a variety of technologies to reduce negative effects of their activities on the natural environment as well as the business environment. Improved pollution prevention, attention to worker safety, reduction of VOCs, safe chemical handling, and using products with no built-in obsolescence are ways to demonstrate a commitment to environmental responsibility while achieving financial goals. In other words, "going green" improves the bottom line. ●

Additional information is available by contacting GoatThroat Pumps at 646-486-3636, visiting www.goatthroat.com, or sending an e-mail to nwestcott@goatthroat.com.

