

**New York State
Environmental Investment Program
Capital Project Summary**

VanDeMark Chemical Inc.

Project Background

VanDeMark Chemical Inc., located in Lockport, NY, produces phosgene and phosgene derivatives that are used in specialty chemicals, plastics and agricultural applications worldwide. VanDeMark is privately owned by Buckingham Capital Partners II, LP, and employs 95 people. More information about the company is available from its website: <http://www.vdmchemical.com>.

In recent years, VanDeMark has faced increasing pressure from global competitors and rising raw material costs. To remain profitable and improve competitiveness, the business sought ways to reduce waste through production process efficiencies. Whatever strategy VanDeMark chose, it would also have to protect its most valuable resource, its employees.

Project Description

This capital project helped VanDeMark fund major waste prevention initiatives that would reduce the amount of carbon monoxide (CO) used while manufacturing phosgene, and install a distillation column that would allow for the reuse of hazardous solvent waste in the derivatives area and give the facility the ability to make new products.

The reduction in CO usage followed installation of an instrumentation and control system that measures and adjusts raw material additions to the phosgene production process. Previously, simple measurement instruments and manual operator adjustments provided a poor control scheme, resulting in high levels of excess CO to ensure the process ran properly. Mass flow meters, control valves and a distributed control system have resulted in better management of the process, minimizing CO excess. The desired goal was to reduce CO excess usage by 80%.

Installing the distillation column, control system,

and glass-lined steel tanks for the distilled solvents enabled VanDeMark to recycle the solvents (versus having to dispose of spent solvents as hazardous waste after every batch, and then starting again with virgin solvents) and also to competitively make products it was previously unable to produce.

Project Results

The new equipment installations were very successful and exceeded their intended goals.

- CO usage has been reduced by more than 113 tons/year, saving over \$150,000 annually.
- Phosgene process losses to the phosgene scrubbers have dropped by over 65 tons/year, resulting in:
 - Increased production earning \$60,000/year.
 - Caustic scrubbing solution reductions of 200,000 pounds, saving over \$40,000.
 - Three-hundred thousand gallons per year less wastewater discharged to the sewer.
- Distillation equipment enabled VanDeMark to:
 - Produce two new products that are expected to result over in \$1,000,000 annual sales.
 - Recycle and reuse over 400 tons of hazardous solvent waste in various processes, saving over \$250,000 on raw material purchases and waste disposal (exceeding their performance objective by over 180 tons/year).

The environmental outcomes from this investment are considerable, as over 400 tons of solvents per year that were being incinerated no longer need to be produced elsewhere in the world and transported to and from the VanDeMark facility. The combined savings and economic benefit to VanDeMark exceeded \$1.5 million annually.

Contractor: Niagara County IDA

County: Niagara
ESD Region: Western Region
ESD Contact: 518/292-5340

Investment:
NYS EIP: \$500,000.00
Contractor Match: \$877,640.75
Total: \$1,377,640.75
Completion Date: October 2007