SIEGWERK USA CO.

COMPANY BACKGROUND

Siegwerk is a privately owned, independent printing ink manufacturer founded in 1830. Through the years, Siegwerk has grown internationally and has become the third largest ink producer in the world. Siegwerk's primary market is the packaging industry, and the company is the second largest packaging ink manufacturer worldwide.

Siegwerk NAFTA's Center of Competence is located in Des Moines, Iowa and has approximately 700 employees throughout the NAFTA region.

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PROJECT BACKGROUND

Siegwerk has an ongoing commitment to the environmental stewardship of its products and processes. As part of its commitment, Siegwerk partnered with a Pollution Prevention Program intern to review sustainability at its Des Moines facilities. Projects focused on process improvements that will reduce waste.

INCENTIVES TO CHANGE

Siegwerk has two driving incentives for change. With the cost of raw materials and the associated transportation expense, any waste is a direct impact to the company's profitability. In addition, Siegwerk's commitment to environmental stewardship and their customers' focus on sustainability is a strong influence.

RESULTS

Solvent Reduction: Siegwerk's generation of hazardous waste is from cleaning processes. The purpose of the cleaning process is to reduce the risk of color and chemical contamination. Siegwerk has an automated program that determines the quantity of solvent used for cleaning in between chemically incompatible systems. However, operators have the option to run additional cleaning cycles to ensure cleanliness. The computer program is not taking into account the scheduling of identical inks being produced back-to-back.

The addition of this parameter will result in savings potential of approximately 8,000 gallons of hazardous waste generation per year at the Des Moines South facility. Similar recommendations have been made for the Des Moines East facility, which would potentially save 50,000 gallons of hazardous waste generation per year.

Solvent Reuse: In Siegwerk's production process, there are parameters that allow for the reuse of solvents that had been used in cleaning operations without compromising the quality standards of their product. With the modification of some of the parameters, Siegwerk can better reuse solvent in their processes.

At the Des Moines South facility, a total of 14 parameter changes were implemented leading to potential hazardous waste generation savings of over 15,000 gallons per year.

At the Des Moines East facility, a similar process change can be implemented and has the potential to save 13,000 gallons of hazardous waste generation per year.

Solvent Adjustments: Siegwerk had multiple cleaning solvent blends that were used throughout their processes. After review of the solvent blends and their chemical properties, modifications were made to optimize the reuse of these materials.

The implementation of this project resulted in reducing approximately 37,000 gallons of hazardous waste generation at the Des Moines South facility.

Air Pollutants Diverted in Tons

	Total for all sectors
SO2	2.60
CO	9.49
NOX	1.88
VOC	2.13
PM	0.52

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	1,074
CH4	116
N2O	28
CFCS	25

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
DSM SOUTH FACILITY SOLVENT REDUCTION	$61,833	8,000 GALLONS HAZARDOUS WASTE	IN PROGRESS
DSM EAST FACILITY SOLVENT REDUCTION	$384,327	50,000 GALLONS HAZARDOUS WASTE	PROPOSED
DSM SOUTH FACILITY SOLVENT ADJUSTMENTS	$293,594	37,000 GALLONS HAZARDOUS WASTE	IMPLEMENTED
DSM SOUTH FACILITY SOLVENT REUSE	$121,194	15,000 GALLONS HAZARDOUS WASTE	IMPLEMENTED
DSM EAST FACILITY SOLVENT REUSE	$102,282	13,000 GALLONS HAZARDOUS WASTE	PROPOSED