

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

Pixel Physics, Inc.

Project Background

Pixel Physics, a small business located in Rochester, NY, is a prototype system development company specializing in photonic instrumentation systems. Photonics combines optics with electronics integration, such as lasers, fiber optics and detectors. Pixel worked with the Canandaigua Wine Company (CWC), the largest winery in New York State, at the Winery's request to produce a system that would eliminate industrial process waste. CWC estimated that it lost about 70,000 gallons of product annually at their Canandaigua facility and another 35,000 gallons at its wineries in Widmer and Batavia.

Project Description

Pixel was hired to design, build and implement an in-line fluid monitoring sensor system that could instantly detect the transition between different liquids in a transfer pipe and alert an operator (or trigger an automated valve) to change the transfer and holdout valve routing. Pixel was charged with determining process and operation parameters, and testing a prototype sensor package under realistic plant conditions. CWC worked with Pixel during the implementation and testing phases to achieve a successful sensor system.

Project Results

This research project proved highly successful. An in-line optical sensor was integrated into the winery's process. The sensor was tested using "real" plant conditions. The results showed that: (1) It was possible to automatically monitor the process flow in a winery; (2) performance of the automated sensor exceeded the performance of the established technique of manually monitoring the flow; and (3) a sensor package meeting the winery specifications for performance, fouling, cleanability, and ruggedness could be economically manufactured. Implementation of the sensor package decreased product waste by 70,000 gallons and realized savings of \$116,500.

The sensor package was accepted within the industry and orders continue to be received. CWC ordered 20 sensor packages for 2003 and an additional 20 for 2004.

A start-up company Flowtonics, was set up to manufacture the automated sensor systems. Flowtonics was acquired by Impact Technologies, and it continues to make and sell fluid process sensors within the food and beverage industries.

Contractor:	Pixel Physics, Inc. (now known as Geo-Spatial Systems, Inc)	NYS EIP Investment:	\$119,000
County:	Monroe	Contractor Match:	\$86,084
ESD Region:	Finger Lakes	Total:	\$205,084
ESD Contact:	518/292-5340	Completion Date:	March, 2002