

Company: MAOLA MILK AND ICE CREAM COMPANY

Location: City of New Bern  
Craven County

Application: Ice Cream and Milk Products (SIC 2024 & 2026)  
Process Modification: Operational and Maintenance  
Procedures, Equipment Change.

Description: Maola is a multiproduct dairy processing facility whose major products are milk and ice cream. The waste load from a processing plant is largely a result of milk products which are lost to the sewer system.

Initial waste reduction success came by increased awareness of product loss from discussion of operation and maintenance procedures among employees. Milk plant losses steadily decreased from 250,000 lbs. in September, 1986, to 86,300 lbs. in December, 1986, for a 65% reduction. Losses did not exceed 100,000 lbs. per month during 1987. The 170,000 lbs. of milk saved in 1986, yielded a 17,000 lb. decrease in wastewater discharge BOD.

Other contributions to BOD waste load reduction came from several changes in the pasteurizing system, and the raw and pasteurized cleaning-in-place (CIP) systems. In the pasteurizing system a recovery system was installed to collect solids from flushing out lines from startup, product changeover, and line-clean out. A similar system was installed for recovery of initial potable water rinses from the raw and pasteurized CIP systems. Additionally, a sealed bottom dumpster was purchased to contain product from returned product cartons or damaged packages. Recovered material is largely used as animal feed. The total annual BOD recovery was 320,000 pounds.

Savings: Savings include materials that can be reclaimed and reused as well as material diverted to animal feed. Annual savings in product is about \$60,000. Other savings not specifically determined are overhead costs, lost sales and wastewater treatment surcharge. These savings are in addition to the \$288,000 being saved annually from product loss prevention from the employee awareness program. Total estimated savings in 1988, were in excess of \$350,000 with total

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Savings: savings exceeding \$500,000 annually once all process changes are fully implemented. Material and installation costs for the process changes alone were estimated at \$54,000 and annual increased costs due to operation and maintenance were estimated at \$35,000. For this investment, savings of up to \$300,000 are considered possible with a potential payback period of less than four months.