



# Ventura Foods LLC



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## Organization Background

Ventura Foods was formed as a privately held joint venture between Mitsui & Co., and CHS, Inc. following the merger of Wilsey Foods and Holsum foods in 1996. They have eleven plants in the US and three in Canada with offices in Singapore, Toronto, Texas, and Mexico City. This project focused on the location in Albert Lea, MN with 200 employees. In Albert Lea, they package mainly margarine, shortening, and lard products for companies and everyday consumers.



*"This summer I got the opportunity to apply concepts I learned in the classroom to help save energy and water. I am so grateful for the support and kindness I got from MnTAP and the Ventura Foods team. Through this opportunity, I've been able to grow my skills and become a more confident engineer. I'm excited to use what I've learned for my future career." ~ AP*

## Project Background

The plant uses large amounts of both fuel and water in their production processes. Most of this water is heated to high temperatures for both production and sanitation. Since this facility has products with kosher certification, a lot of heated water is used to maintain this standard. This project team believed a lot of opportunity to conserve water and fuel could be found in this process. A lot of fuel savings could also be explored through insulation of tanks and pipes.

## Incentives To Change

Over \$2 million is spent on utilities annually at this plant. The price of natural gas has also risen causing a lot of these projects to be under a two-year pay period or more. Since sewer rates are also increasing, the team wants to limit the amount of water sent down the drain. A large percentage of this water is still clean or can be easily treated and reused. On an annual basis, Ventura Foods-Albert Lea is sending 69% of its incoming water down the drain. Sanitation is the cause of most of this due to rigorous cleaning processes.

## SOLUTIONS

### Insulate Hot Oil Tanks

There are 38 uninsulated tanks at the plant with an average surface temperature of 120 °F. Over 10% of the plant's natural gas usage is being discharged as heat due to lack of insulation on these tanks. The insulation selected for this project was closed cell spray foam insulation with DC315 fireproof paint. Natural gas will be reduced by 74,000 therms resulting in a savings of \$52,200 annually.

### Install Control Valves on Thermolines

The thermolines are currently heating all the time, but product is not being made over the weekend. There is energy savings opportunity to turn off this heat source when it is not in use. One of the lines isn't in use 300 days per year which costs over \$14,000 annually. Out of the six lines, five of them are cost effective to put control valves on.

### Repair Steam Traps

A steam trap audit was done, and 27 traps were not working properly. Leaks were calculated and found over 5

# Solutions

million lbs of steam was heating up production areas and going down the drain. The quote selected puts this project under a year payback period.

## Replace Holding Tank 14

A holding tank for butter is currently leaking over 19 gallons per minute (gpm) of water when in use and 0.8 gpm when not. A fix was attempted that got the leak down from 38 gpm to 4 gpm but it was broken again. A newer tank of similar size is recommended to replace it. Since the capital costs are covered by a replacement tank already on site, an estimate of \$5,000 for installation of the tank is the total project cost. The annual savings were calculated based on the current leak of 19 gpm. This gave a savings of 4.5 million gallons of water and 35,700 therms.

*“Having Alicia as a MnTAP intern was a great experience this summer. She was tasked with water and fuel savings, which was a large and complex undertaking. Alicia quickly broke down the large task into manageable projects and found easy solutions to our misuse of water and fuel. Her efforts far exceeded our expectations and achieved both her goals and ours.”*

*~ Wade Nelson  
Maintenance Manager, Ventura Foods*

## Install Spray Ball Systems on Remaining Churn Tanks

The north and south churn tanks get sanitized every Sunday to comply with kosher certification. Currently, the tanks are overflowed with boiling water to sanitize them. Based on other mix tanks that have a spray ball system installed, an estimate was formed on savings associated with no longer overflowing and instead using the spray balls for cleaning. This project will save about 50,000 gallons of water and a little over 600 therms annually.



Recommendation	Annual Reduction	Annual Savings	Status
Insulate Hot Oil Tanks	74,000 therms	\$52,200	Implementing
Install Control Valves on Thermolines	44,000 therms	\$37,900	Recommended
Repair Steam Traps	55,000 therms 600,000 gal	\$46,000	Implementing
Replace Holding Tank 14	35,700 therms 4,500,000 gal	\$69,000	Implementing
Install Spray Ball System for Remaining Wash Tanks	635 therms 50,000 gal	\$1,150	Recommended

MnTAP Advisor: Jon Vanyo, Senior Engineer