

QUICK FACTS

- INDUSTRY: DRY SAUSAGE MANUFACTURING
- STARTUP DATE: APRIL 2008
- PROJECT GOAL: To support increased production capacity, reduce TSS/FOG/BOD loading to the city and demonstrate environmental stewardship.

HISTORY

The meat processing facility had historically used an in-house skim tank design to treat production wastewater. The skim tanks have been modified over the years to meet decreasing effluent limits, but more improvements were necessary. In order to meet the desired level of performance and in keeping with the company's commitment to improvement and sustainability; they looked to outside support to identify a treatment solution.



VENDOR SELECTION

The facility began the search for a partner in this endeavor by accepting bids from seven different companies. These bids were evaluated based upon the technology, experience in the industry, price, and reference checks. World Water Works was awarded the project based on:

1) Superior Technology

The WWW DAF process was demonstrated to be the most robust, forgiving, and consistent technology of the many that were evaluated.

2) References

The quality and enthusiasm behind the references for WWW compared to the others help dictate the ultimate decision. Hormel felt that if WWW customers were that passionate about WWW, then WWW clearly has formed highly valued partnerships which are essential to the success of any project.

3) Superior Experience

The WWW team has extensive experience in food and beverage facilities including food processors such as Hormel Foods.

4) Lower Overall Costs

The efficiency of the system is demonstrated in the small footprint, lower energy requirements, and lower chemical consumption as compared to other DAF treatment technologies.



TECHNOLOGY

WWW supplied two critical treatment steps: Equalization (EQ) and Dissolved Air Flotation (DAF); along with an advanced PLC control system in the upgrading of this facility: One of the essential features missing from the original wastewater facility design was sufficient Equalization (EQ). The facility could not normalize flow, concentration, or adjust operations for unforeseen in-plant spills or wastewater treatment equipment repairs. WWW installed a 160,000-gallon equalization tank which was mixed using jet aeration technology (supplied by others). The pH is monitored, but because the EQ is properly sized, the water self-neutralizes and there has been no need for pH control chemicals. The DAF unit is fed from the EQ by gravity and the flows are controlled by an auto-positioning valve and mag flow meter. A high rate WWW/Resource DAF was used as the primary treatment device to remove fats, oils & greases (FOG), total suspended solids (TSS), and insoluble organics (BOD/COD). The WWW technology incorporates Nikuni dissolved air technology, cross-flow design, plate pack design, and progressive water extraction packed in a polypropylene welded vessel.

PROJECT SUMMARY

The facility was facing many challenges at their Midwest facility:

- 1) Production increase
- 2) Aging wastewater equipment
- 3) Increased pressure to decrease loading to the POTW

The facility and WWW partnered together to develop and install a new and improved wastewater treatment system to meet all of the facilities and the city's goals. WWW supplied new Equalization, a new WWW DAF system, new chemical feed systems, and a new PLC control system to replace the existing system. The new system not only reduced the average loadings to the city with a chemical usage far below historical and projected requirements but even more importantly, it all but eliminated slug loads that had occurred frequently in the past. Additionally, the system will not only meet their current needs but will also allow for significant future growth.



PARAMETERS	INFLUENT #/ DAY	LIMIT #/DAY	PRIOR TO UPGRADE DISCHARGE #/DAY	PRIOR TO UPGRADE REMOVAL %	AFTER WWW UPGRADE DISCHARGE #/DAY	AFTER WWW UPGRADE REMOVAL %
BOD	1,222	750	775	37%	423	65%
FOG	543	100	72	87%	37	93%
TSS	2,009	375	295	85%	110	95%

