

No Grease Needed
Saves \$15,000/year in Repair Costs
No More Constant Worrying About Equipment Failure

QUICK FACTS

Project:

City of Cudahy Water
Treatment Plant

Project Type:

Replaced flocculation equipment at a municipal surface water treatment plant with a rated capacity of 6 mgd capacity serving 18,500 customers.

Location:

Cudahy, WI

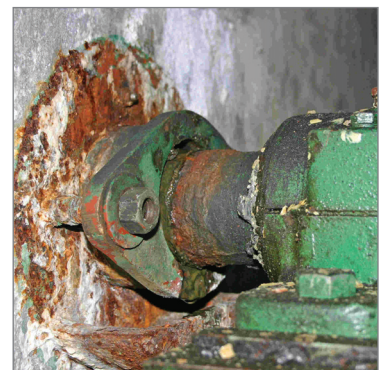
The Situation

Operating Cudahy's flocculation equipment was like driving an old car: the gas pedal could never be punched for fear of what might break. Experience had proven that pushing too hard and too fast, or varying speeds, would result in flocculator equipment breakage. Attempting to keep failures to a minimum, Cudahy operated only at constant speeds and installed grease lines to keep bearings lubricated as best as possible. However, constant speed operation sacrificed optimal floc formation and challenged attainment of water quality goals. The grease lines proved to be susceptible to clogging and bursting, and ended up just being another piece of equipment to have to fix. Even the compromise to operate at constant speeds did not solve the problem: shafts became misaligned and broke at least once per year. Basins had to be taken offline anywhere from one to three months, depending on the severity of the breaks and related repairs. Taking the affected basins offline challenged operations; repairs challenged the budget. The Cudahy plant did not have the skills on staff to make the needed equipment repairs which required the plant to hire outside contractors.

The Solution

Searching for answers, Cudahy's Plant Superintendent, Frank Miller, attended a local water association meeting where people were talking about Amwell's Greaseless Flocculator Bearing System. Frank arranged to view the Amwell equipment in operation firsthand at a nearby plant, and was impressed enough by this time to contact Amwell.

Amwell worked with Cudahy's consulting engineers to identify the root causes of the failures. While worn out bearings were certainly part of the problem, it was also discovered that the wooden paddles were very heavy and significantly contributed to equipment failures. With this and other gathered information, Amwell designed a new system which reused Cudahy's existing dry well drive system, and replaced old paddle wheel assemblies with lightweight, high strength composite materials. The new Amwell Greaseless Flocculator Bearing System was also installed. With the new design, the Cudahy plant could now employ an updated variable frequency drive, which Amwell designed and manufactured.



BEFORE

“Amwell bent over backwards to make sure the job was done right for us.

Love ‘em... very impressed!

“
Frank Miller,
Plant Superintendent

The Solution Continued...

When asked what he thinks of Amwell, Frank simply states, “Love ‘em.” He was “very impressed” with Amwell throughout the project, and still speaks highly of them years later. “Amwell bent over backwards to make sure the job was done right for us,” Frank commented. The new equipment has not had any failures, and the plant has had improved performance and efficiency in the achievement of its water quality goals.



AFTER

The Results

Equipment

Before Amwell

- Flocculator shafts would break due to irregular bearing wear and shaft misalignment
- Bearings had to be greased frequently
- Grease lines installed to fix the problems ended up malfunctioning
- Equipment couldn't be run at optimum speed for fear of failure

After Amwell

- Not one flocculator shaft breakdown
- Not one failure of any of the bearings installed
- No grease needed
- New equipment can run at any speed needed to optimize floc formation

Plant Costs

Before Amwell

- Broken shafts increased cost of maintenance; \$10,000 - \$15,000 annually for one shaft alone
- Grease line failures cost in excess of \$2,000

After Amwell

- Reliable equipment saves Cudahy \$15,000/year in repair cost
- Greaseless, reliable bearings eliminated need for extra expense of grease lines and related maintenance/repairs

Operating Period

Before Amwell

- Basin offline for 1 – 3 months for repairs, adversely impacting ability to function optimally
- Equipment run at constant speed reduced mixing efficiency
- Staff in constant state of vigilance for catastrophic breakdown

After Amwell

- Equipment now runs 24/7/365
- Cudahy can vary operating speeds as needed
- Water quality goals easily and efficiently attained
- No more constant worrying over equipment failure

For more information on how Amwell can assist in meeting your water and wastewater treatment needs, please contact us today.

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