



Georgia Pacific wanted to expand their water treatment and knew that a reverse osmosis system would bring them more in energy savings and chemical savings. With Culligan, their total annual savings is \$52,711.00.

Customer: Georgia Pacific, Phillips, Wisconsin

Description of Business: Georgia Pacific is a leading manufacturer and marketer of building materials, including plywood, gypsum boards, lumber and engineered wood products. They have 300 locations in North America, South America and Europe. At this location, they manufacture interior hard board paneling and paint and finish it.

Contact: Frank Donovan, Maintenance Supervisor

Situation/Problem:

- They have 2 boilers: primary boiler is a York-Shipley fire tube boiler rated at 24,000 pounds per hour; standby boiler is a Cleaver Brook water tube boiler rated at 20,000 pounds per hour.
- Their steam usage in the summer is 8,000 to 12,000 pounds per hour; winter usage is 14,000 to 20,000 pounds per hours. A significant amount of hot water is needed to produce the steam, resulting in high energy usage.
- After dissolved solids build up in a boiler, the equipment needs to “blow down” in order to send the impurities down the drain. Prior to the installation of equipment, they were blowing down approximately 4500 gallons of waste water per day.
- Feed water to boiler was 210 parts per million (TDS), or 12 grains per gallon on average. Heating water with a high level of TDS causes significant scale build-up. Heating elements in the boiler have to heat through the scale before reaching the water, thus causing high energy use. For boilers, it’s best to have no more than 3-5 grains per gallon or ideally, less than one grain per gallon!

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Solution:

- Lower the TDS rate, thereby decreasing the amount of blow-downs and improve energy efficiency.
- Decrease water usage and chemical usage, resulting in cost savings.

Equipment Installed:

- RO system to lower TDS and reduce blow-down rate
- Carbon filter that protects RO system by filtering out chlorine that could be harmful to an RO system's membrane
- Storage tanks
- Cleaner for RO system
- Annual inspection/servicing of equipment

Results/Customer Benefits:

- Total annual savings of \$52,711.
- Since the installation of the RO equipment, they've reduced blow-downs from 4500 gallons of water per day to less than 200 gallons per day.
- The estimated energy savings from blow-downs and the savings in water and sewage costs is \$31,000 annually.
- Chemical costs went from \$38,905 in 2002 to \$24,694 in 2005, for a yearly savings of \$14,211. (Equipment was installed in 2003)
- With the RO system, Georgia Pacific was able to direct the concentrate water directly to storm (to the river) rather than going through a waste water treatment facility, thus avoiding fees.
- TDS of the feed water to the boiler has gone from 210 parts per million (12 grains per gallon) to approximately 24 parts per million (just over 1 grain per gallon), resulting in 8 times less solids entering the boiler.
- Georgia Pacific received a rebate check from their state's energy company because they improved energy conservation.

Culligan Advantages:

- Competitive pricing
- Full line offering of water treatment equipment
- Consultative, solutions-based selling approach

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