



Caviness Beef Packers selects Yardney Water Management Systems to Design and Fabricate a 1,250 GPM Water Treatment System for the Removal of Iron (Fe) and Manganese (Mn)

The Challenge

This beef processing plant located in Hereford, TX was having significant issues with the use of the water from the city due to the high levels of iron (Fe) and manganese (Mn). This resulted in higher than expected plant operating costs.

Proposed Solution

Yardney Water Management Systems of Riverside, CA (Yardney), designed a turnkey system using DMI-65, a revolutionary new filtration media manufactured by Quantum Filtration Medium in Western Australia. DMI-65 is a silica sand based filtration media that will remove iron, manganese and arsenic when operated in the presence of chlorine (sodium hypochlorite).

System Design and Fabrication

Yardney has over 40 years of experience in system design and vessel fabrication and has provided many different types of systems for all types of applications. One of the main advantages of the vessels produced by Yardney is the ability to utilize many different types of specialty medias without having to make significant modifications to the vessel design. The result is additional technical and economic benefits realized for the client.

The client requested a completely automatic system that would provide a constant flow of 1,250 gpm. This requirement was an ideal application since it allowed for one of the many standard designs offered by Yardney to be utilized. The system utilized a total of sixteen (16) 54" diameter x 60" sideshell, fusion epoxy lined, carbon steel vessels. Yardney has determined, from many years of experience and hundreds of system installations, that this diameter of vessel provides a high degree of flexibility and ease of operation when dealing with applications requiring constant or variable flows. This size vessel is also more cost effective than using larger diameter vessels and can achieve a complete backwash within 4-6 minutes while requiring less water during the backwash cycle.

System Automation and Operation

The client's main desire was to have a system that would be effective in removing the iron contaminant, but also require little operator involvement with regards to operation and maintenance. With this in mind, Yardney proposed an automatic system with a control package utilizing a free chlorine residual monitor and metering chemical pump.

The chlorine-metering pump also receives a signal from the free chlorine residual monitor, which then controls the chlorine-metering pump. The result is that the proper hypochlorite feed and free chlorine residuals are monitored and maintained without operator attention regardless of the service flow through the treatment system.

The Results

The system was installed and commissioned in October 2011. Since start-up, the quality of the water being supplied by the Yardney system utilizing the specialty iron removal media has met and exceeded the client's expectations. This has allowed the plant to use the city water treated by the Yardney system throughout the plant. Additionally, they have found other uses in the plant due to the high quality of the water produced. In terms of cost savings, the client is realizing over \$6,000/week on filter bag and cartridge filter savings since the installation and start-up of the treatment system.

For additional information please contact:

Yardney Water Filtration Systems

T | +1 951.656.6716

E | sales@yardneyfilters.com

yardneyfilters.com