



Removing Unwelcome Tower Basin Dirt Accumulation at Plastics Manufacturer

Application: BAC 1500 Series Cooling Towers

Particles & Debris: Manufacturing Particulate and Agricultural Matter

Issue: For many years a plastics manufacturing plant in the Midwest experienced extensive dirt and debris build up in their two 700-ton cooling towers. The towers served their needs, but demanded consistent maintenance. Saturation of the environment with particulate and debris originated from being in close proximity to manufacturing processes and agriculture. It was not unusual for the cooling tower basins to incur as much as six inches of dirt and debris that required each tower basin to be cleaned at a minimum of 2-3 times per year. In addition, the heat exchangers required tube cleanings three times during each summer, and tube cleanings are very costly. This continuous contamination continued to foul the chillers and limited efficiency to less than 80%. They determined a comparison of combined annual energy savings before and after the cleaning service would be helpful. They were able to determine if the heat exchangers could be protected from unwelcome particles and debris which created fouling, it was possible to achieve an annual savings of \$16,500 to \$ 22,000.

Equipment prescribed: Puroflux PF-64 Series Hydrocyclone Particle Separators with Basin Sweeper Piping and Sweeper Jet Systems.



Status: All in less than one year after the Puroflux installations were completed, the site eliminated the frequent plant shutdowns for basin and tube cleanings, and drastically reduced their monthly chemical treatment costs. With fully operational equipment there was no more need for rental chillers and their hefty expense.

Along with preventing system fouling failures, a Puroflux Hydrocyclone Particle Separator paired with the basin sweeper jets and pipe helps prevent the dangers of a Legionella (Legionnaires Disease) outbreak, which attacks the human respiratory system. In order for the biocide, (the chemical used to kill biological growth), to saturate and kill the bacteria, the solids must be removed. That job is done on a continual basis by the separator/sweeper pairing. By removing the nutrient source for this deadly bacteria, its likelihood of survival is greatly diminished.

In order to avoid under-deposit corrosion, the Puroflux Separator keeps the basin clean and free of solids. Very highly corrosive hydrogen sulfide deteriorates the tower basin, heat exchangers, and internal structures. This hydrogen sulfide evolves beneath the dirt build-up, relying on the absence of oxygen, which are known as sulfate-reducing bacteria (SRB). Chemical treatment and proper water filtration applied together will successfully control this problem. Puroflux was instrumental in providing an advanced solution that protected their cooling towers, offered a short-term ROI, and was crucial in providing a safe work environment.

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