

Cross filters out pollution worries at cheese making plant

A potential pollution problem concerning the final effluent from a cheese making plant in Cheshire has been averted by the installation of an innovative filtration system using Cross 'zero gravity' coils. The Glanbia Foods Creamery at Malpas produces 'crumbly' cheeses, including Caerphilly and Lancashire, for leading supermarkets and Marks & Spencer. The plant has a weekly cheese output of up to 100 tons, the production of which demands the daily use of up to 200 tonnes (cubic metres) of water. The used water, containing a high residual solids loading from the production process, is passed through the creamery's effluent plant for primary settlement and secondary activated sludge treatment before flowing into a tributary of the River Dee in an environmentally clean condition.

Roger Williams, Environmental Co-ordinator at the Glanbia Creamery, describes the problem: "Under normal circumstances our treatment works is able to reduce the residual solids loading in the final effluent to within the 30 ppm (parts per million) consent allowed by the Environment Agency. However, at times of high loadings from the cheese making process the effluent plant could struggle to cope with the demand, creating a risk of exceeding the limit of our consent which, in turn, could result in the imposition of heavy fines by the Environment Agency for breaking strict pollution legislation.

"Fortunately, the Environment Agency has been very helpful with the provision of advice and assistance in overcoming this potentially serious problem, and has been impressed with our chosen solution.

"We realised that the key to solving the problem was the introduction of effective additional filtration. In the first instance we considered using conventional sand filters, but when filtration specialists Cross Manufacturing looked at the problem they were able to design a far more compact and efficient alternative at a fraction of the cost."

The Cross filtration package utilises patented 'zero gravity' stainless steel coils that backwash automatically by means of pressure differential, with a two-hour time lapse back up. At times of peak loading final effluent is diverted into the Cross package and undergoes filtration in two stages, 400 microns followed by 50 microns.

Filtration is performed by a total of eight 'zero gravity' coils, each designed for a maintenance-free operating life of at least five years. Backwashing is performed sequentially on individual coils, so that flow through the filter is never interrupted. Power for backwashing is provided by 12V d.c. actuation.

At the Glanbia creamery final effluent is tested every day and if the level of suspended solids exceeds 20 ppm the Cross filter plant is run as a precautionary measure. Since its installation

in June 2001, the package has successfully achieved a reduction of the suspended solids loading to within the 15ppm figure preferred by the Environmental Agency.

Cross Manufacturing believes that the success of the installation at Glanbia Foods should prove to be of interest to the operators of similar plants, especially in light of the trend towards increasingly strict pollution legislation. One of the system's main benefits noted by Glanbia's engineers is its compact size, but perhaps a more attractive feature is its flexibility in meeting any size of application with no unnecessary redundancy - a significant contribution to limiting both capital and running costs.

