

Reduced Product Loss and Treatment Costs with On-Line TOC Monitoring

Problem

Without on-line real-time analysis, the food processing facility relied on grab samples and lab analysis to verify if the facility meets compliance requirements. This manual process jeopardized compliance, and offered little room for the plant to improve operational costs.

Solution

Providing accurate and real-time measurement at all processing sites, the plant installed 10 Biotector B7000 analysers for realtime measurement of TOC and waste loads in effluent.

Benefits

Biotector B7000 reduces waste discharged from all of the process plants, with some achieving 40% reduction in waste loads. Also, the treatment plant receives less organic loading, improving operations and operational costs.

Background & Company Profile

This Hach® customer is an international nutritional solutions and cheese group with a strong global presence in key food markets. Its headquarters includes 8 processing facilities, annual revenue of £1.2 billion, and more than 1,800 employees.

Prior to the Biotector B7000 TOC Analyser, the plant relied on grab samples and laboratory measurements to determine:

- The levels of waste from each of the process plants
- The total loading to the bio-tower treatment plant
- The success or failure of the treatment facility



Solution and Improvements

Biotector Installation

Waste feeds from the individual plants to an in-house wastewater treatment plant (WWTP). Organics, nitrates, and phosphates are removed and clean water is discharged to the local river. "By controlling the waste load to the treatment plant and operating within specifications, the final discharge regulatory requirements are easily achieved. Biotector helps to meet our environmental objectives and targets as required by ISO14001 and ISO15001," said a plant EHS Manager.

A total of 10 Hach Biotector B7000 on-line analysers, installed between 1997 and 2012, monitor the amount of waste product discharged from each of the process plants in order to facilitate the implementation of the waste minimisation program. The analysers also measure total organic loading to the treatment plant to ensure the plant operates within its designed specification and regulatory requirements for water discharged into the river.

The Benefits of Biotector

Using Biotector On-line TOC Analysers reaps multiple benefits for the plant. "We saw a dramatic reduction in the amount of waste product discharged from each of the process plants. Some plants showed a reduction of up to 40% soon after installation, which gave us a payback of less than three months," said a plant EHS Manager. "We also saw a reduction in loading to the treatment plant, thus ensuring the plant operated at its optimum level. This yielded reduced running costs and the total elimination of an odor problem that had been an issue for many years."

Conclusion

Thanks to continuous on-line TOC analysers, the company is able to overcome operational deficiencies as well as common issues other companies in the food processing industry face.

"The food processing industry does not have the internal maintenance support structure of analyser technicians more commonly available in heavier industries such as refineries and chemical plants," said an EHS Manager. "This was overcome because the Biotector analysers operate without requiring regular and frequent internal maintenance support. We have the analysers serviced by our local Biotector distributor on a contract basis and apart from that, we only perform minimal maintenance here. They don't need too much attention as they're quite reliable."

Summary

The Biotector B7000 enabled this dairy facility to:

- Meet regulatory compliance due to real-time analysis of waste loads and TOC
- Reduce waste loads delivered to the facility's WWTP up to 40%, reducing costs of operations at the WWTP
- Achieve consistent and accurate measurements due to the Biotector's low-maintenance requirements



Biotector B7000 TOC Analyser