Industrial Discharge Monitoring before Inlet to the Municipal WWTP

Problem

Heavy and irregular industrial loads that enter urban treatment facilities not only hinder plant operation, but also make it difficult for facilities to comply with governmental compliance discharge limits.

Solution

The purpose of this system is to monitor contaminating loads on the central monitoring system and take measurements from the drainage pipeline leading to the treatment facility.

Benefits

Discharge monitoring provides plant operators with preliminary information and allows them to take necessary steps in advance. It also acts as a deterrent to limit and control the industries responsible for the discharge.

Background

Today, wastewater management is of growing importance for both governments and industrial facilities, due to rapidly depleting natural resources and an increase in environmental issues.

Monitoring of wastewater discharge from industrial activity is particularly important and this is also a key factor in making sure that urban treatment facilities operate correctly. Furthermore, it plays a critical role in the billing process for incoming discharges and in determining penalties where limits are exceeded.

Highly polluted irregular discharges are among the main concerns for municipal wastewater treatment facilities. Loads that are high in organic substances can cause significant operational difficulties for plants.

This project will set an example for municipal authorities who face similar challenges.

Appearance of monitoring station interior – B7000 analyser and SC1000 controller

Appearance of monitoring station exterior – Sampling and drainage pipeline

Discharge Monitoring Station

Water quality monitoring systems have a relatively complex structure, with many key components that must be carefully assembled.

- Reliable analysis equipment for long-term use
- Durable cabinet designed and constructed using robust materials that can endure harsh environmental conditions
- Convenient sampling and sample handling systems
- Systems for data acquisition, transfer and monitoring

Being sure to get accurate results all the time – it is very important to have stable analytical instruments designed to work under harsh industrial wastewater conditions. With the help of the B7000's superior TSAO technology and effective selfcleaningsystem, online total organic carbon measurement is as simple as a basic parameter measurement such as conductivity.

Determination of Total Organic Carbon

As part of the project, eight B7000 TOC analysers were installed to monitor the organic load at 11 individual discharge points. Three of these operate in two channels and can perform online measurements at two individual points. The below table shows the measurements taken by the analyser over a three-month period and the results of comparative measurements taken by the regulatory laboratory.

The B7000 TOC analyser with unique two-stage advanced oxidation technology provides accurate results even in the most demanding industrial conditions, with reliable problem-free operation.

Biotector B7000

Comparison of laboratory measurements with B7000 results

Benefits

- Safeguarding of the wastewater treatment facility
- Safeguarding of the environment
- Designation of the billing amount based on the discharge load
- Excess limit tracking
- Deterrent against illegal discharge procedures

Outcome

The installed system enables instantaneous and real-time TOC (Total Organic Carbon) measurements at 11 potential contamination points within Istanbul's sewage network. The analyser is designed according to the challenging and variable industrial wastewater conditions and guarantees longterm operation and accurate measurement of results. Measurements are available instantly, making it possible to quickly determine when limits have been exceeded and thus enabling municipal wastewater treatment operators to take the necessary steps before the load reaches their facility.

This project will set an example for similar wastewater treatment facilities and the number of equivalent systems will increase in the near future.

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DOC43.52.30250.Oct16