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Case Study

Monitoring the Effectiveness of a Filtration System

Abstract

Monitoring saltwater discharge from a power station in south Wales to confirm that a newly fitted filtration system is performing to MCERTS criteria.

Equipment Used

Troll 9500 multi-parameter water quality sonde, Flow Through Cell and an RDO sensor.

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Monitoring the Effectiveness of a Filtration System

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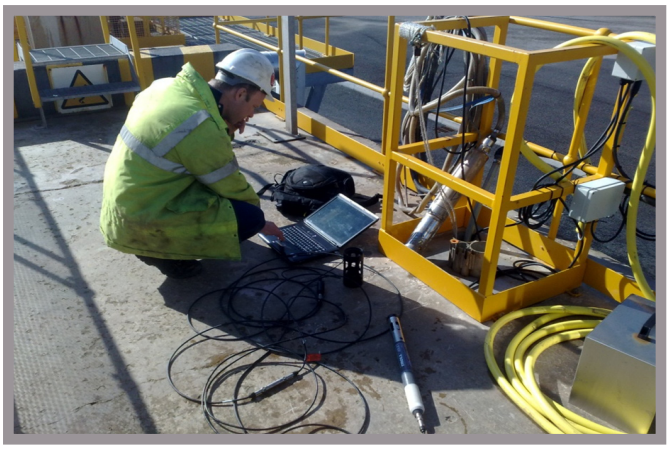
Background

Having had a new filtration and carbon reclamation system installed, a power plant in south Wales needed to prove to the Environment Agency that saltwater discharge from the cooling process was meeting MCERTS criteria. It was decided that for effective analysis water quality data would need to be collected from two locations.

The first water quality testing site would be within the lab, where pumps bring the discharge up and through a flow through cell. The second was in situ in the pump's basin, within a stilling well. Both of these needed to relay the information via Modbus communication back to the station's main control panel.

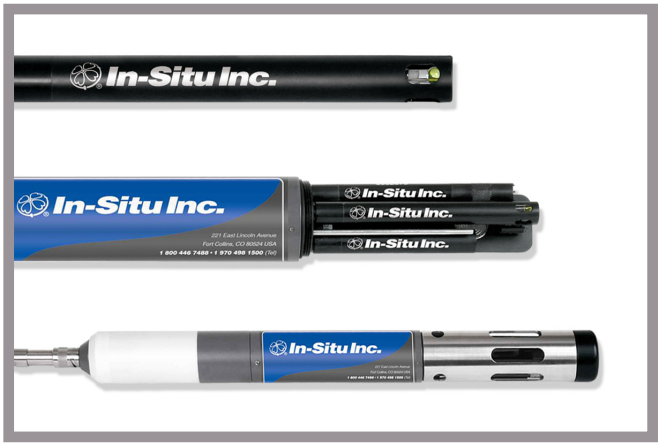


pic1. Stilling well measurement site

The Solution

While a pump hours calculation was ultimately used to assess flow, it was decided to monitor water quality in 2 locations using In-Situ's TROLL 9500 multi-parameter sonde. The Troll 9500 is a water quality sonde with unrivalled versatility, and it's accuracy, ease of use and ease of calibration have made it the leading water quality sonde in the environmental monitoring sector.

Both sondes were fitted with dissolved oxygen, pH/ORP, electrical conductivity, pressure and turbidity sensors (temperature and barometric sensors are also fitted as standard). Other sensors available for the TROLL 9500 include phosphate, nitrate and ammonium.



pic2. TROLL 9500 Multi-Parameter Sonde

In-Situ's patented optical dissolved oxygen technology gives a stable and reliable reading for the client, with minimal calibration and maintenance requirements. All of the sensors are field replaceable, and can be calibrated in less than 5 minutes using Quick Cal solutions.

Adding to the TROLL 9500's versatility is the ability to connect via USB or RS232(serial), and to accept SDI-12 connections. It can be used in conjunction with any laptop PC, Rugged Reader, or other handheld PC that is running Win-Situ software - designed specifically for use with the 'TROLL' family of products.

Along with the installation and training provided, RS Hydro have been responsible for an ongoing maintenance contract. This gives the customer complete peace of mind throughout the deployment, with the assurance that any faults will be rectified and/or parts replaced immediately.

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