SENSING EXCELLENCE

Multisensor

CASE STUDY

Monitoring for VOCs in Water Reclaimed from a Petrochemical Plant

Application Dossier: No. X

Application

Monitoring for VOCs in Water Reclaimed from a Petrochemical Plant

Product

MS1200 with 4-20 mA output

MS1200
Oil in Water Monitor

Application

Monitoring of reclaimed water for VOC contamination.

Customer

Petrochemical plant in Taiwan.

Problem

The customer needed an on-line method to monitor methylene chloride and dichloromethane concentration levels in reclaimed water from a gas reclamation tower.

Product

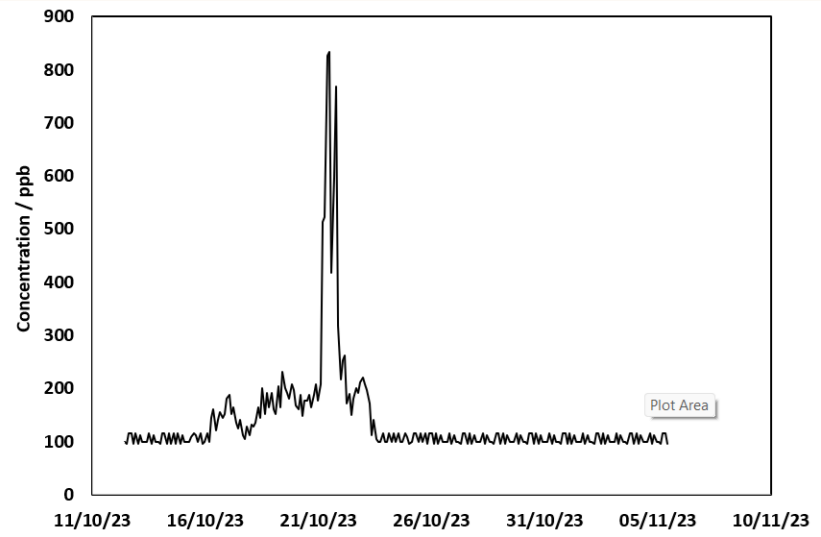
MS1200 with 4-20 mA output.

Installation Facts

The sample is mainly composed of Triethylamine and Dichloromethane together with 3 - 8 % saline in reclaimed water. The water is then used in a chlor-alkali industry factory. The instrument has to be able to continuously analyse high chloride samples.

The gas reclamation tower main job is to remove the three above mentioned chemicals. The TVOC level should not exceed 100 ppb and when this happens, the customer is notified and can adjust the process accordingly.

Also, higher TVOC levels can be used to identify problems such as gasket leakages and ruptured discs and act before the problem becomes too serious. Some graphs with explanations are available in the following page.



Data Analysis

In the graph above we can see the result of a gasket leak that was detected in October and resulted in a spike of the readings reported by the VOC monitor.

This allowed the customer to act and prevent bigger problems.

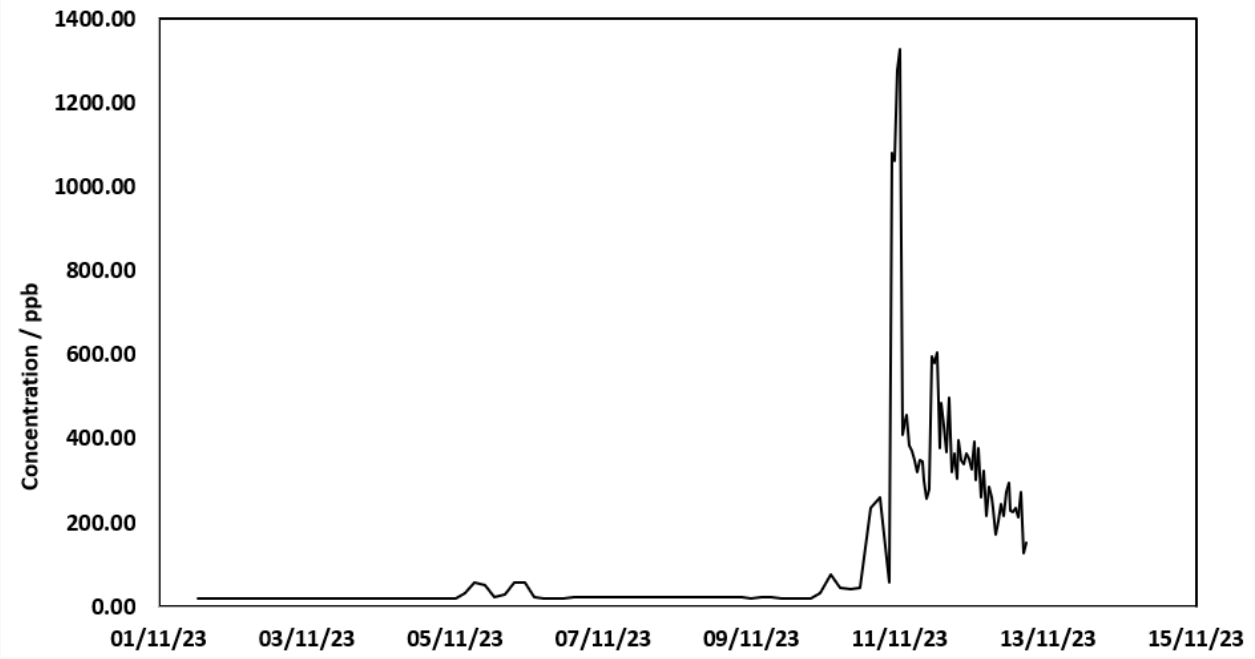
In the graph below, we can see the result of some ruptured disks that were not promptly replaced and led to a number of days of high pollution. The problem was eventually fixed.

Understanding the Data

Multisensor Systems prides itself for the high level of support and assistance that it offers to its customers.

This is especially important when it comes to understanding the data that the analyser is providing.

Data analysis is part of our standard support to customers who are using the oil in water analyser.



Did you know?

Triethylamine (TEA) and Dichloromethane (DCM) are essential chemicals in various petrochemical processes, each serving distinct roles due to their unique properties. Triethylamine, a tertiary amine, is widely used as a catalyst or neutralising agent in the production of petrochemical derivatives. It is particularly valuable in alkylation reactions, polymerization, and the manufacture of synthetic resins, where its basicity and ability to stabilise reactive intermediates enhance process efficiency. Additionally, TEA is employed as a corrosion inhibitor, preventing equipment degradation in refineries and chemical plants, thus contributing to operational reliability.

Dichloromethane, a chlorinated solvent, plays a critical role in extraction, degreasing, and chemical synthesis within the petrochemical industry. Its high solvency power and low boiling point make it ideal for separating and purifying hydrocarbons or other compounds in complex mixtures. DCM is also a key component in the production of adhesives, coatings, and cleaning agents used in industrial applications. However, its volatile nature and potential health risks require careful handling, storage, and adherence to environmental regulations to mitigate exposure and emissions. Together, TEA and DCM underscore the versatility of specialty chemicals in optimizing petrochemical processes.

Photo showing the MS1200 in the petrochemical plant.

Why Multisensor?

The customer wanted a wide spectrum analyser to ensure compliance with the regulations.

Multisensor

For more information

Visit: www.multisensor.co.uk
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Front Image Credit: Roy Luck, Ineos petrochemical plant

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Multisensor Systems Limited reserves the right to revise any specifications and data contained within this document without notice.

Multisensor Systems is a developer and supplier of Water and Gas Analysers specialising in oil in water and hydrocarbon analysers, oil in water detectors, VOC monitors and THM analysers based in the United Kingdom.

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CHANGELOG

MSS DOCUMENT CHANGE RECORD
Document Ref 1-000195

Date	Version	Changed By	Checked By	ECN
26/02/2025	1.0	GO	LR	0225-06