

Monitoring of Spring Water for Kerosene Contamination

APPLICATION

Monitoring of water coming from a spring feeding a local water company

CUSTOMER

Water Company, Slovenia

PROBLEM

A train accident where 10,000 litres of kerosene were spilled near the spring threatened the water source. After the spill, the water plant was making 8 laboratory tests per day at a huge cost.

PRODUCT

MS1200-01-SYS – Standard version, 4-20 mA

INSTALLATION FACTS

In June 2019, a train transporting kerosene derailed, and 10,000 litres were spilled into the ground. The geography of the area meant that it was quite difficult to ascertain when and if the contamination was going to reach the water source (a spring which feeds a river). The local water treatment plant (WTP) relies on this water source and the only alternative is to import water

from a nearby country at a cost of 1,500 Euro/hour.

This meant that the water company had to strike a balance between keeping the water safe for consumption and, at the same time, keep the costs under control.

For the first few months the WTP was doing a lot of testing to ensure the quality of the water, however, these tests, carried every 3 hours, came at a high cost themselves (2,400 Euro per day). [continues below...]

Learn more on the new oil in water monitor and analyser by clicking on the image



A picture of the unit installed in the outbuilding.

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Multisensor was contacted to address the problem and after some consultations the MS1200 Oil in Water Monitor was installed at one of the two critical points.

In March 2020, the system was also tested by the National Laboratory in a test between the GC-MS and the online measurement, with the results below.

Since then, the WTP management can confidently rely on the analyser to give a measurement every 15 minutes and their testing with the laboratory has massively decreased leading to huge savings in money, time and effort.

WHY MULTISENSOR

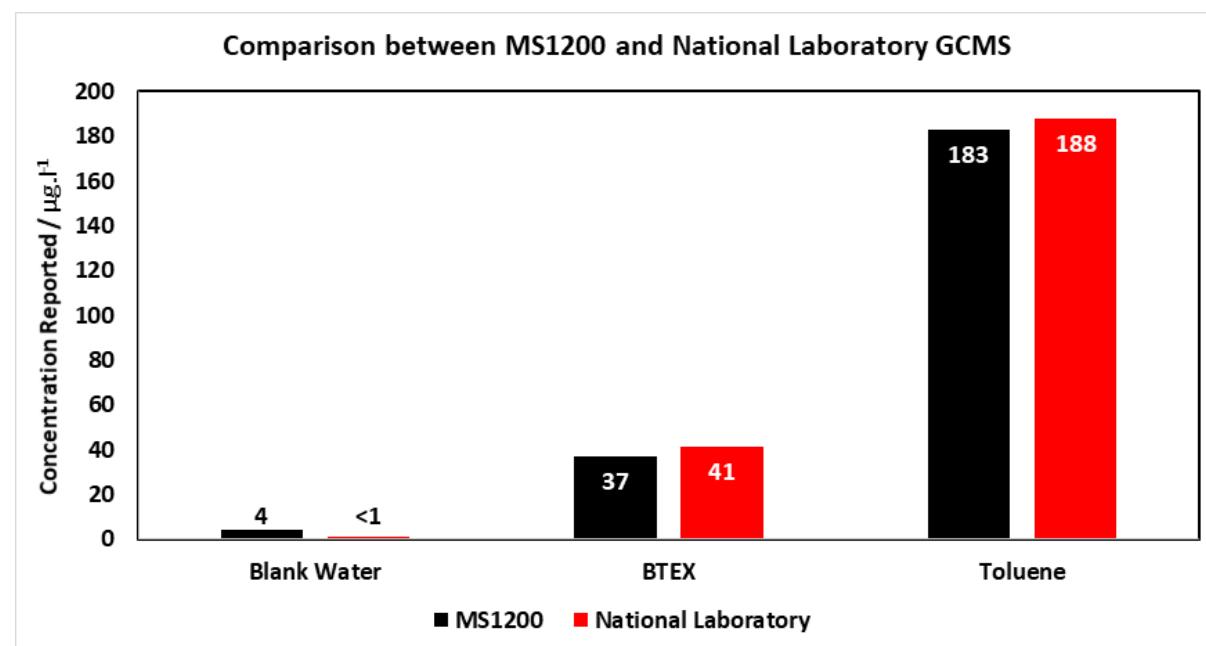
The Water Treatment Plant needed a way to detect hydrocarbons at very low levels with alarms at 10-20 ppb.

Following extensive testing the instrument is now used instead of expensive laboratory analysis carried out that were carried out every 3 hours.

TECHNICAL INFORMATION

Measurements were conducted with a 20-minute sampling interval at an airflow rate of approximately $84 \text{ ml} \cdot \text{min}^{-1}$. Measurements were conducted on a GCMS instrument (GC - Agilent 6890N, MS - Agilent 5975). Separation was performed on a capillary column (Agilent J&W DB - 624 UI capillary column; 121-1324; 20m x 180 μm x 1 μm). The SIM technique was used for the GCMS detection.

The instrument was calibrated and validated for toluene using Multisensor's standard method.



Comparison between the MS1200 and the National Laboratory of Slovenia