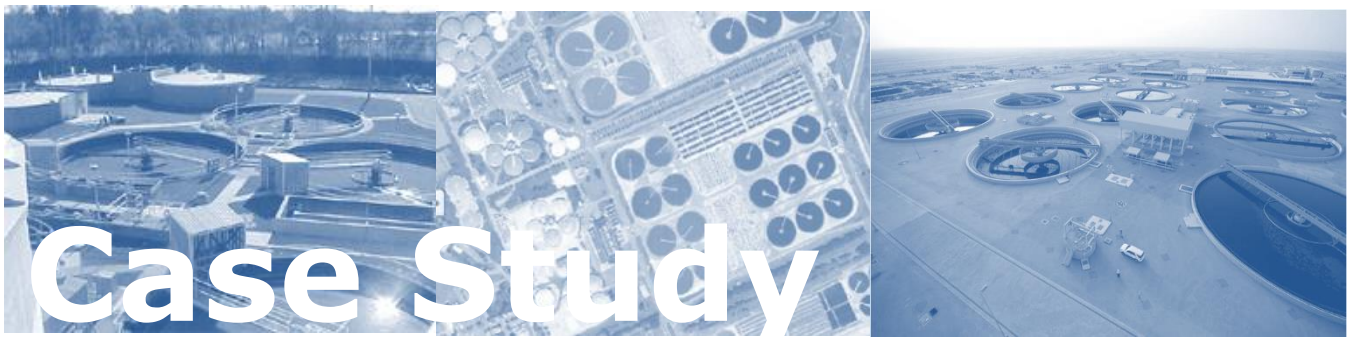


Ambient Air Monitoring Applications

Waste water treatment plants

Personnel Safety & H2S filter management

Context & Challenges

Globally, the wastewater treatment is the first public health issue. Urban development leads to urbanization near waste water treatment plant and extension of sewerage network. These aspects induce to an augmentation of sulfur compounds (H2S, mercaptans and sulfides) which are very corrosive, odorant and toxic. To monitor these compounds online CHROMATOTEC® offers high meteorological solutions.

As a result of the confinement of the waste water stations, toxic components such as H_2S and Methylmercaptan increased. Safety of employees on such working sites has therefore become of major problem. To fight this hazardous pollution, air filtering systems have been installed. For the station managers, personal safety coupled with the need for **constant air quality control** and **filter change** has been a heavy task.

Chromatotec® Solutions

TRS MEDOR ppb or ppm for up to 14 compounds

With only one instrument, it is possible to analyze up to 14 sulfur compounds. Thanks to specific sulfur detector (SSD) and AIR or N2 carrier gas, the separation and sensitivity is excellent down to 1 ppb levels and low odor unit/m^3.
The instruments are being calibrated with primary gas standard certified at ±2%. There are **no interferences** due to the gas chromatography separation and the sulfur specific detector. The analyzer is **LINEAR**: range 0 / 100 ppb.

The instruments are fully automated thanks to internal calibration (**airmoCAL**). The **VISTACHROM** software controls the analyzers, multiplexer, meteorological station and enables storage and display of the chromatograms thanks to Peak Viewer.
It is possible to transfer data to a data logger or modelling software with the communication protocols MODBUS RTU, JBUS, German PROTOCOL and X-Path.

The adequate solution for in situ sulfur analysis

The building in which there is the central point of distribution of the waste waters into the 5 digestors is very closely followed by the technicians on site. The micro-biological activity, thereby the fermentation of the organic material, results in a production of toxic sulfur compounds (H_2S). It is therefore of the utmost importance to **screen** this zone of activity in the building for safety reasons.

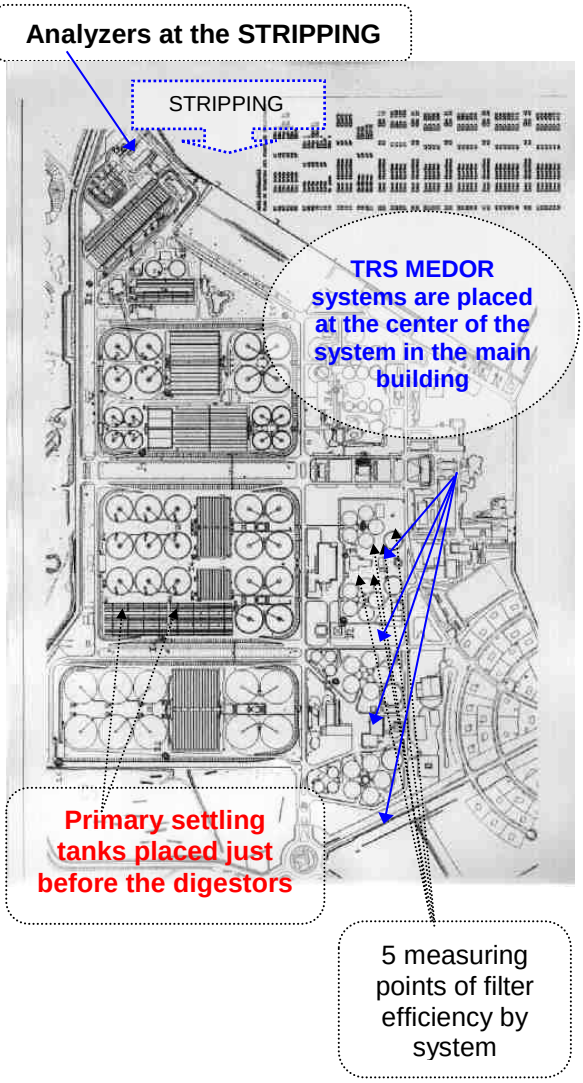
The **TRS MEDOR**, placed in this hostile and difficult environment, answered this need by giving a constant measure every **3 minutes** of the mercaptans (H_2S, methyl-SH, DMS+DMDS) on this site.

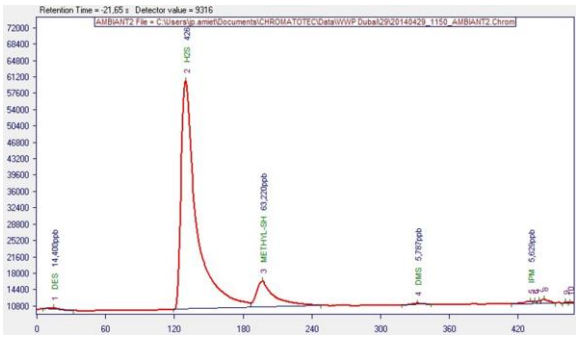
Coupled with a multiplexer the TRS MEDOR gives the necessary data to **anticipate** the change of the 5 H_2S filters (one at every digestor).

Results

- **increased efficiency** and **time gain** for the laboratory assistants,
- **increased safety for the technical personnel,**
- **better management of the filter changes with cost savings.**

Map of Waste Water Site





Conclusion:

TRS MEDOR, the adequate solution for in situ sulfur analysis and odor monitoring for surveillance of wastewater treatment plant:

- Fully automated with gas generator (N2 or Air/Calibration gas)
- Data transfer to a data logger or by modem or Ethernet
- Stability and repeatability (from 1 ppb to 1000 ppm, areas and retention times)
- Linearity (from 1 ppb to 1000 ppm)
- In compliance with ISO 6326/2 norm and DIN 51855/7, no interferences
- Approval on sulfurs (ASTM D7493-08 2008)
- In standard, TRS MEDOR analyzes 7 compounds H2S,SO2,MM,EM,DMS,DES and DMDS
- In option up to 14 sulfurs THT, H2S, SO2, MM, EM, DMS, IPM, TBM, NPM, MES, 2BM, DES, NBM and DMDS.
- NEW: manage meteorological station and communicate with odor modelling software.
- OPTION ppt range with a pre concentration trap for DMS/DES and DMDS.