

VEOLIA EAU

Continuous monitoring of odor and target gas emissions at a WWTP, with the RQ Box solution



The site

- Wastewater treatment plant Aquapôle, located in Isère, France
- Operated by Société Dauphinoise d'Assainissement (SDA)
- Capacity of 500 000 population equivalent
- ISO 14001 approach



Aerial view of the WWTP

Challenges

- To define a zero point for the odor footprint of the site in order to identify areas for improvement
- To meet the air quality objective in the vicinity of the site (French law of 22 April 2008): 5 ou_E.m⁻³ not to be exceeded more than 175h/year (2% of the time) within a radius of 3 km around the plant
- To reduce, or even eliminate the odor impact of the site, in particular near the highway
- To communicate with local authorities and residents about the actions undertaken

Solution

A 6-month study, involving 3 complementary approaches:

- **Odor and physico-chemical measurement campaign**, to rank odor sources and to educate the electronic nose for recognition and quantification of odor in ou_E.m⁻³ (EN13725)
- **RQ Box solution for odor and gaseous pollutants monitoring**, including:
 - a mobile RQ Box electronic nose, positioned in turn on each area of the site: sedimentation, grit removal, decanting, thickening, etc. The detection system is adapted to a WWTP: odor, VOC, H₂S, mercaptans
 - a wireless communication system
 - RQ Net software for results acquisition and display
- **Odor impact assessment** in the current configuration of the site (zero point): emission dispersion modeling to determine the scope and frequency of odor nuisances and calculation of concentrations in the vicinity.

Results

- **Ranked odor sources**
- **Continuous monitoring of emissions, at each area of interest on the WWTP**
 - ⇒ Monitoring the odor concentration, odor flow rate and pollutant concentrations
 - ⇒ Detection of emission variations and wind gust anomalies due to continuous measurements
 - ⇒ Better understanding of emission phenomena thanks to concentration profiles over time
- **Determination of emission thresholds in order to meet the air quality objective**
- **Easier communication based on continuous instrumental measurements**
- **Decision making tool for the implementation of odor control solutions**