

## Installation:

The structures concerned are generally covered and ventilated, and operate in a slight vacuum in order to prevent the discharge of air to the exterior. The bad air is collected by an extraction system before being sent on to a special treatment unit. The deodorization itself takes place in this unit.

Depending on the characteristics of the site concerned (available space, concentration of pollutants, fluctuations in the air, etc.), the deodorization process will employ biological techniques (Alizair®) and/or physical-chemical techniques (Aquilair®).

In both cases, the installation will be dimensioned as a function of the air flow to be treated. In fact, both methods are known for their ability to cope with a very broad range of air flows. They are therefore suitable for both small stations and large plants.

### AQUILAIR®

- **COMPACT**  
Of modular and vertical design, Aquilair® is easily incorporated into a compact assembly and can be easily adapted to increases in capacity.
- **FLEXIBLE**  
Regulation of the method by the Oxyreg® technique allows the acceptance of any variations in the concentration of the pollutants without affecting the quality of the discharged air. Aquilair® is thus able to cope quite reliably with extreme climatic events.
- **AUTOMATIC**  
The whole installation is automated and therefore requires no particular surveillance.



**OXYREG®** is an original technique that allows instantaneous and precise adjustment of the concentration of chlorine injected into scrubbing towers. It is based upon an optical analysis system (patent of Veolia Water Solutions & Technologies and SECOMAM) that continuously controls the chlorine content of washing water. The overall quantity of reagents used is reduced, and the purification output is increased.

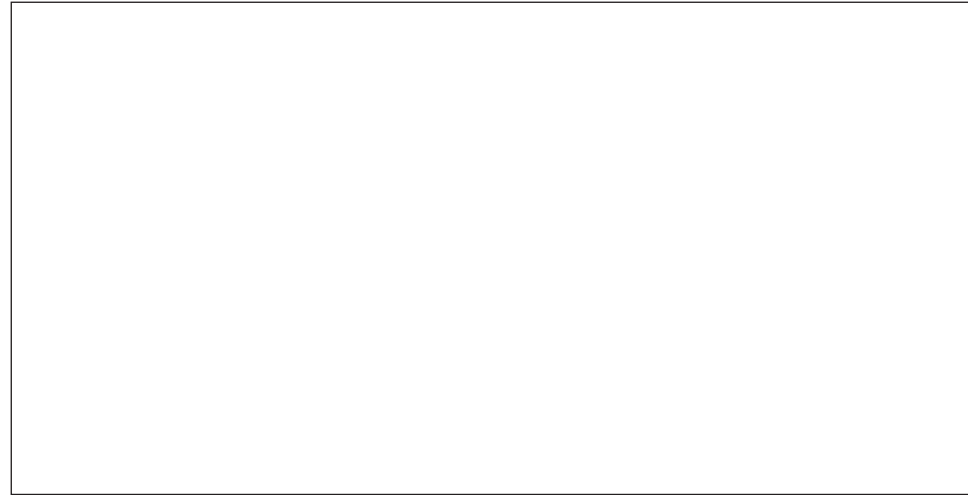
### ALIZAIR®

- **ECOLOGICAL**  
Based on a biological process, Alizair® is a "green" method that operates with no chemical product. The only products necessary are the nutritive ones required for the bioassimilation.
- **SIMPLE**  
Alizair® is also characterized by its simplicity. In fact, one single piece of equipment treats all odorous compounds, thus facilitating its installation and its operation.
- **ECONOMIC**  
Competitive in terms of installation cost, Alizair® is also energy saving.



Blois (France)  
ALIZAIR® process

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## ODOR TREATMENT Sewage and Sludge







Zaragoza (Spain)  
AQUILAIR® process

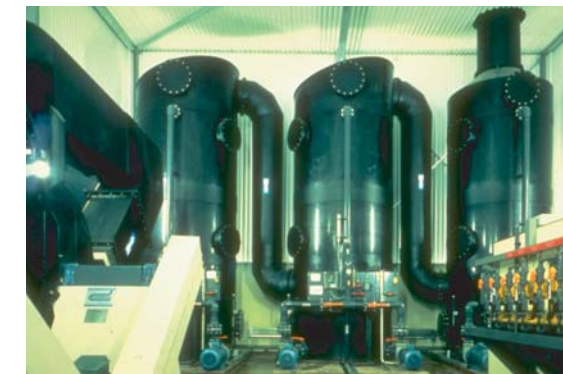


Main sources of olfactory nuisance induced by wastewater or the sub-products of water purification (sludges, fats, etc.):

- **sulfurous compounds:** hydrogen sulfide (H<sub>2</sub>S), mercaptans, organic sulfurs, etc.
- **nitrogenous compounds:** ammoniac, amines, etc.
- **carbonyl compounds:** aldehydes, cetones, fatty acids, etc.



Antibes (France)  
AQUILAIR® process

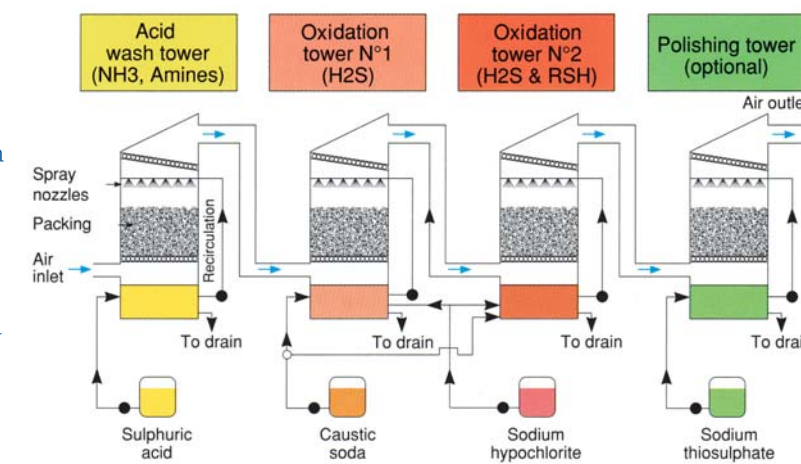


The first tower is called the acid tower, in which a suitable pH is achieved by the addition of sulfuric acid. This column eliminates all the nitrogenous compounds.

The second is an oxidizing tower, with the addition of bleach or of electrolytic chlorine, which it is made alkaline by the addition of soda. This stage is for elimination of the sulfurous compounds (H<sub>2</sub>S, organic sulfurs).

Depending on the circumstances, the use of a third tower that is strongly alkaline and oxidizing increases the effectiveness of the treatment on sulfurous compounds that are not very soluble, such as the mercaptans.

In order to refine the treatment, a sodium bisulfite tower (a reducing agent) can be added. This fourth, finishing stage, at neutral pH, eliminates the aldehydes and cetones.



The ALIZAIR® method can achieve very high filtration speeds (500 m/h) with purification charges that can exceed 50 g/h/m<sup>3</sup> of material. considerably improved.