



# AirAdvanced® Study

## Odor Diagnosis and Control

### Dynamic Olfactometry

#### SERVICE DESCRIPTION

**Odor pollution** has become one of the most significant environmental issues in cities and urban areas. **Dynamic olfactometry**, a methodology widely accepted by the scientific community in Europe and other countries worldwide, is used to evaluate odor nuisance and develop solutions.

SUEZ AIR & CLIMATE provides **odor diagnosis and control** through its AirAdvanced® **Study** line, conducting olfactometric studies based on emission measurements following the **UNE-EN 13.725** standard, for which it is **accredited by ENAC**.

#### METHODOLOGY

The olfactometric study methodology consists of the following phases:

- **PHASE I: Identification of Potential Odor Emission Sources and Sampling Plan Development.**

In this phase, the main processes in the studied facility likely to produce bad odors are analyzed and identified. A sampling plan is developed, considering all odor emission sources, determining the sampling method and the number of samples needed to make the study representative.

- **PHASE II: Sampling and Olfactometric Analysis.**

For **sampling**, the standard primarily includes three sampling methods depending on the type of odor source: **wind tunnel** or **Lindvall box** for passive surface sources (without aeration), **probe or lung method** for point sources like chimneys and ducts, and **hood** for active surface sources (with internal aeration).

The **olfactometric analysis** is conducted at the SUEZ AIR & CLIMATE laboratory in Alicante, equipped with two olfactometers and a total analysis capacity of 50 samples per day.



#### ADVANTAGES AND BENEFITS OF THE SOLUTION



Widely accepted **methodology** based on the **UNE-EN 13.725** standard.



**Identification of problematic odor sources**



Determination of **odor impact** in the **surroundings** through odor dispersion **modeling**.



Performance **evaluation** of **deodorization** systems



Theoretical assessment of **odor impact** in the surroundings for facilities in the project phase.



**Proposal of deodorization solutions** after odor diagnosis

## KEY FIGURES

# +800

**Projects** conducted in various odor-generating facilities in Spain, Portugal, France, Algeria, the Czech Republic, China, Peru, and Chile.

# +20 years

**Of experience in odor diagnosis and control** in diverse facility types.

# +50 years

**Of cumulative experience** in dynamic olfactometry among experts.

SUEZ Smart  
Environmental  
Solutions Spain S.L.U.

### AIR & CLIMATE

For more information:

[air-climate-sp@suez.com](mailto:air-climate-sp@suez.com)

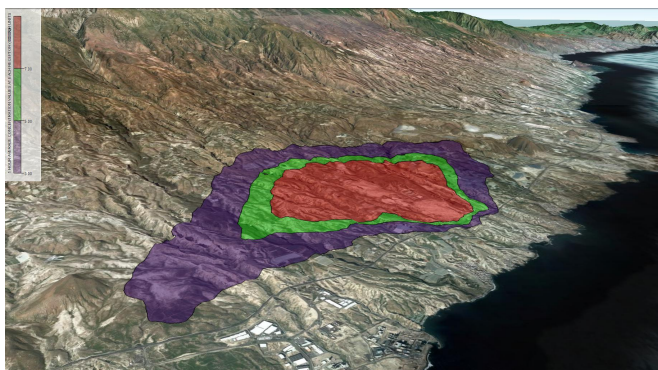
The panel consists of a minimum of four previously selected individuals, in accordance with the UNE-EN 13.725 standard. The result of the olfactometric analysis is the **odor concentration** of a sample, expressed in **odor units per cubic meter** ( $\text{uo}_E/\text{m}^3$ ).

- **PHASE III: Odor Emissions Calculation**

Once the odor concentration for each sample is obtained, the **odor emission value** is calculated to determine the contribution of each source to the facility's total odor emissions. This parameter represents the number of **odor units emitted per unit of time** by the source and is typically expressed in millions of odor units per hour ( $\text{uo}_E \cdot 10^6/\text{h}$ ).

- **PHASE IV: Calculation of Immission Concentrations and Odor Dispersion Modeling**

To calculate immission values and the impact of odors in the surroundings of the studied facility, the **CALPUFF Gaussian atmospheric dispersion model** is used. This model integrates meteorological and topographic data. Immission results are represented as odor **isopleths** on a map of the facilities and their surroundings, enabling the determination of the environmental odor impact near the studied plant.



## INDUSTRIAL APPLICATIONS

SUEZ AIR & CLIMATE has over 20 years of experience in odor diagnosis and control across various facility types, including:

- Wastewater treatment plants and industrial treatment plants.
- Municipal solid waste treatment plants (landfills, composting plants, etc.).
- Oil refineries and chemical, paper, and textile industries.
- Agro-food industry.
- Slaughterhouses and animal by-products plants (SANDACH).
- Biomethanization and biogas plants.

