Environment, energy and climate

# Industrial Wastewater: Treatment and Monitoring

One day to control the wastewater discharges of an industrial site: origin and characterisation of effluents, pretreatment and treatment processes, plant operation, self-monitoring and evidence of compliance. Participants start from their own effluents and analysis results to spot drifts, reduce the pollutant load at source and make monitoring reliable.

**Duration : 1 day**

## Objectives

1. Identify the sources of effluent of a site and the parameters that characterise them
2. Explain the principle of the main pretreatment and treatment processes
3. Organise self-monitoring: sampling points, frequency, sampling method, laboratory
4. Interpret analysis results and react to an exceedance
5. Reduce the pollutant load at source and make plant operation more reliable

## Programme

**Day 1 — morning**

• Origin of effluents: washing, clean-in-place, processes, utilities, contaminated rainwater

• Monitoring parameters: pH, temperature, COD, BOD5, TSS, nitrogen, phosphorus, oils and grease

• Regulatory framework: discharge permit, general or sector discharge limit values, connection to the public network

• Reduction at source: product recovery, dry cleaning before washing, separation of flows

**Day 1 — afternoon (workshop)**

• Pretreatments: screening, sieving, grease removal, neutralisation, buffer tank

• Physico-chemical and biological treatments, sludge management

• Self-monitoring: representative sampling, composite sample, laboratory, register, reacting to a drift

• Workshop: reading your analysis results and a plan to improve monitoring; knowledge test

## Teaching methods

• Visit of the plant or discharge point, when the training takes place on your site

• Analysis of your test results and flow readings

• Cases from agri-food sites, canneries and surface treatment workshops

• Diagnosis exercise on a plant in drift

• Final test on discharge parameters, processes and self-monitoring

## Assessment and documents

Knowledge test at the end of the day, feedback survey at D+1. Numbered training certificate, verifiable online, for each participant; the company receives the training report and the plan to improve discharge monitoring.

Bilingual materials for every participant; each classroom course comes with its digital twin on OmniLearn.

**Good to know**

To reduce withdrawals and measure the footprint of your products, see “Water Footprint: ISO 14046:2014”. The site’s register of obligations is covered in “Environment and Energy Regulation in Morocco, Monitoring”.

## Practical information

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| **Duration** | 1 day |
| **Audience** | Environment and utilities managers, treatment plant operators, maintenance, laboratory, QHSE |
| **Prerequisites** | No prerequisites |
| **Group size** | Groups of 6 to 12 participants, in-company |
| **Format** | In-company, face to face on your site |
| **Language** | French, Darija or English; bilingual materials |
| **Funding** | OFPPT special training contracts (TFP), GIAC, Maroc PME: we prepare the applications with you, at no extra cost. |
| **Programme customisation** | Programme adapted to your procedures, your equipment and your audience |

## Frequently asked questions

**Does the course give the limit values applicable to our site?**
It shows where to find them: in your discharge permit or your connection agreement, and in the orders setting general or sector limit values. The values specific to your site are read from these documents, which we review with you in the workshop.

**Do we need a treatment plant to attend?**
No. A site connected to the public network without its own treatment also has monitoring obligations and a direct interest in reducing its pollutant load. The parts on processes help it choose a pretreatment if needed.

**Who should attend?**
The plant operator or utilities manager, the environment manager, and if possible a representative of the laboratory and of production. A large share of the pollutant load is decided in the workshops, not at the plant.

**What is the link with the water footprint?**
The water footprint takes into account the degradation of water quality by discharges. The self-monitoring data from this course therefore feed directly into an assessment under ISO 14046:2014.