

# WATER TREATMENT



**CEGELEC Défense Solutions & Services** designs and produces mobile water purification units with a production capacity of between 40 and 400m<sup>3</sup>/day, and maintains the facilities in operational condition.

- DRINKING WATER
- WASTE WATER
- TREATMENT OF SLUDGE



Ultrafiltration



Osiose inverse

## DRINKING WATER PRODUCTION

The technologies in our treatment units use membranes, allowing us to create compact, modular systems :

- Microfiltration,
- Ultrafiltration,
- Reverse osmosis.

These different types of membrane processes are implemented according to the quality of the water resource :

- Fresh water,
- Salt water,
- Chemically or biologically polluted water.

## WASTE WATER AND SLUDGE PROCESSINGS

Waste water units integrating sludge dewatering are of modular design :

- Main component integrated in a 20 feet open top container,
- Standard unit capacity sized for 200 population equivalent.

Proposed processes include biologic treatment for waste water and mechanical filtering for sludge dewatering.

Main advantages :

- Rapid operation,
- Easy management with on screen monitoring of main parameters,
- Provision of simple, robust and maintenance friendly equipment.

## OPERATIONAL REQUIREMENTS

Production of large volumes of drinking water, in total autonomy and in any conditions. The units need to be transportable by road but also by rail and sea.

The Comprehensive, integrated solutions are specifically suited for :

- The French Armed Forces expeditionary operations,
- Civil defence or NGO operations during natural catastrophes (earthquakes, floods),
- Humanitarian operations,
- Expeditionary base camps,
- Field hospitals.

## SMTE MOBILE WATER PURIFICATION UNIT



**Input water supply :** Fresh water (surface or underground water)

**Output yield :** 40 m<sup>3</sup> / d

**Architecture :**

- 2 x processing boxes (1 m<sup>3</sup> each),
- 1 x storage box.

## MOBILE FOUNTAIN



**Input water supply :** Fresh water (surface or underground water).

**Output yield :** 70 m<sup>3</sup> / d

**Architecture :** Integration on light flatbed truck.

## WTU 400 WATER TREATMENT UNIT



**Input water supply :**

- Brackish or salt water (surface or underground water),
- Chemically polluted water (cf specifications).

**Output yield :**

- 400 m<sup>3</sup> / d using ultrafiltration,
- 150 m<sup>3</sup> / d using reverse osmosis.

**Architecture :**

- 3 x containers ISO 20' processing,
- 1 x containers ISO 20' storage.

## SLPEP LIGHT WATER PURIFICATION UNIT



**Input water supply :**

- Brackish or salt water,
- Fresh water (surface or underground water),
- Chemically or biologically polluted water (cf specifications)

**Treatment capacity :** 200 Population Equivalent.

**Output yield :** 9 m<sup>3</sup> / d.

**Architecture :**

- Reverse osmosis process,
- Integrated on truck.

## WASTE WATER TREATMENT UNIT



**Treated raw water :** Urban waste water.

**Treatment capacity :** 200 Population Equivalent.

**Architecture :**

- Biological process (activated sludge),
- Taux d'abattement :  
75% BOD, 75% O<sub>2</sub>a, 75% MES.

## SLUGE DEWATERING SYSTEM



**Type of sludge treated :**

- Sludge from biological sewage plant.

**Treatment capacity :** 40 kg Dry matter / d.

**Architecture :**

- Container 20 ft « Connect ready »,
- Process = Press Filter,
- Setup time < 1 hr / 2 operators.