

# Mostaganem-Arzew-Oran (MAO)



## Sidi Lahdjel drinking water treatment plant



In the early 2000's, in order to cope with global environment challenges of water management in a context of hydric stress, the Algerian authorities initiated a series of major water infrastructure construction projects.

On April 24th 2006, the Agence Nationale des Barrages et Transferts contracted with the consortium SUEZ / MAPA for the design, build and operation & maintenance of the drinking water treatment plant of Sidi Lahdjel.

With a capacity of 561,600 m<sup>3</sup>/day, the plant of Sidi Lahdjel, the second largest plant in Algeria, is part of a large project of water transfer system which provides today the neighbouring cities of Mostaganem-Arsem-Oran (MAO).



## water treatment

The raw water, coming from Chélif dam, is first pretreated in a pre sedimentation plant (820,800 m<sup>3</sup>/d) and then conveyed to Sidi Lahdjel drinking water treatment plant (Mostaganem-Arsem-Oran).

### aeration

The aeration is the first stage of the drinking water treatment. Sidi Lahdjel is equipped with a cascade aeration.

### clarification

The water is then clarified 6 Densadeg<sup>®</sup> 2D, an efficient separation process, allowing to obtain :



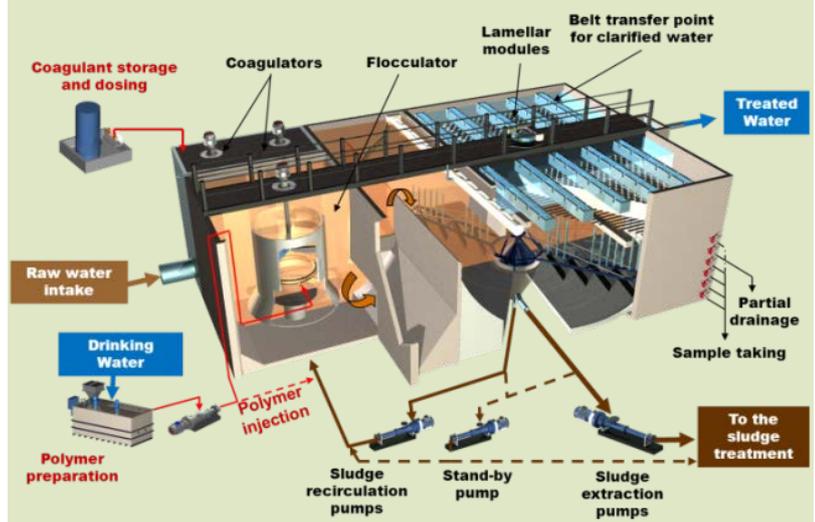
- A speed lamellar settling,
- Efficient sludge thickening
- High quality settled water
- Low sensitivity to the load and flow variations
- Net settling surface of 169 m<sup>2</sup> with fast mixers
- Speed lamellar settling with 6 settlings in operation : 23 m<sup>3</sup>/m<sup>2</sup>/h
- Speed settling: 13,5 m/h

Total flocculation period (agitated zone + piston zone)  
8 minutes 17 seconds et 1 minute 19 seconds

## Densadeg<sup>®</sup> 2D

The Densadeg<sup>®</sup> is a physical-chemical settling tank (optimized flocculation) using external sludge recirculation. It combines the principle of lamellar settling with an integrated thickener.

The Densadeg<sup>®</sup>, a degrémont<sup>®</sup> technology, is installed on more than 500 plants.





## filtration

The clarified water is filtrated on 18 Aquazur® V sand filters (unit flow : 1,300 m<sup>3</sup>/h).

- Surface of each filter: 151.4 m<sup>2</sup>
- Standard speed filtration : 8,58 m<sup>3</sup>/m<sup>2</sup>/h

## physico-chemical disinfection

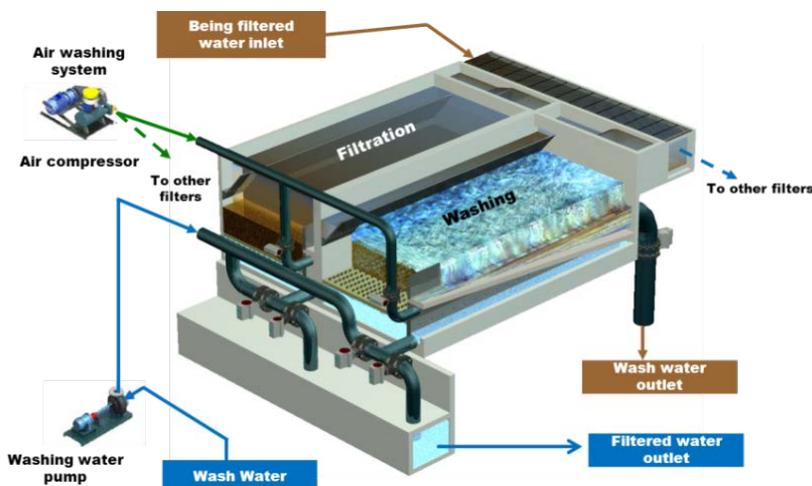
The filtered water receives a final disinfection treatment with injection of chlorine gas.

The water is then stored in 2 tanks (unit capacity : 55,000 m<sup>3</sup>), allowing to maintain a production reserve of more than 4 hours with a flow at 561,600 m<sup>3</sup>/h .

## Aquazur® V

The advantages of Aquazur® V filters

- a high-rate open filter
- original, efficient and economical backwashing
- level controller
- tailor-made operating control



## sludge treatment

The Sidi Lahdjel plant is equipped with a treatment line of the sludge coming from the settling stage with minimal capacity of 33.1 T/d, a medium capacity of 67.4 T/d and a maximal capacity 101 T/d of dry solids.

This line includes the following :

- Sludge extraction
- 2 thickening of Ø18 m, and 4 m cylindrical height with a total volume of 1,000 m<sup>3</sup>
- Dewatering on 5 centrifuges, type D5LL
- Discharge

## stakeholders

Client :

**Ministère des Ressources en Eaux -**  
Agence Nationale des Barrages et  
Transferts (ANBT), Alger, Algeria

Construction :

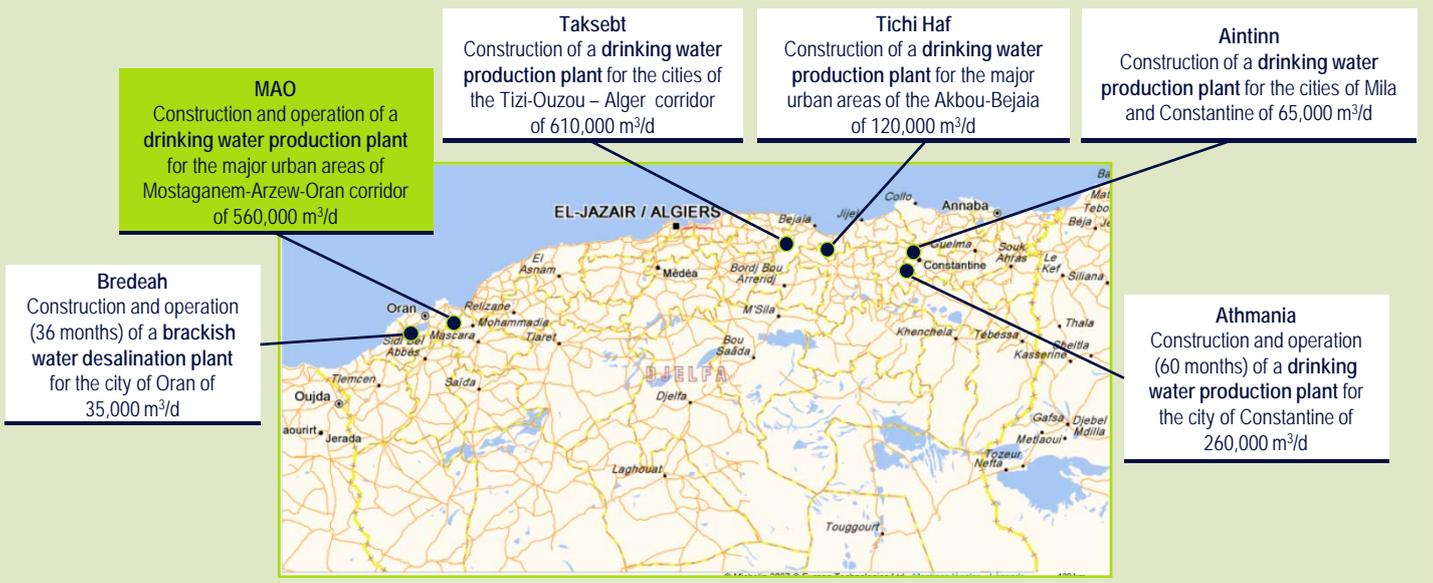
- SUEZ (39%) / MAPA INSAAT (DB 61%)**
- Consortium SUEZ (engineering, supply of equipment , erection, commissioning and O&M)
  - MAPA INSAAT (Civil-Works)

## key dates

- **contract award date :**  
24 april 2006
- **works completion :**  
10 June 2009
- **Operation & Maintenance - SUEZ (100 %) :**  
from 10 March 2010 to 9 March 2012 (12 months, renewed for 12 months in 2011).

## SUEZ in Algeria

The company has been operating in Algeria for more than 50 years (1963)  
SUEZ has recently constructed many drinking water treatment plants for Algérienne des Eaux and the Agence Nationale des Barrages et des Transferts.



### the Algiers Management Contract

an ambitious programme for water, a successful public-private partnership with transfer of knowledge

In 2006, SUEZ signed the first Contract Management in Algeria with the Société des Eaux et d'Assainissement d'Alger for a period of 5 years.

On 1<sup>st</sup> September 2011, the Algerian authorities renewed their confidence in SUEZ by renewing this contract for a further 5 years.

[www.degremont.com](http://www.degremont.com)

Since March 2015, all the Group brands (Degrémont, Ozonia, Aquasource, Ondeo IS, Ameriwater, Infilco, Poseidon...) became SUEZ.

Meanwhile, from now on, the technologies and know-how of our Treatment Solutions offer will be distinguished with the label **degrémont®**.

