

Lusail wastewater reuse treatment plant



Lusail Real Estate Development Company W.L.L. (LREDC) is responsible for the development, construction, promotion and ongoing management of the future city of Lusail.

Qatari Diar Real Estate Investment Company was established in December 2004 to support Qatar's growing economy and to coordinate the country's real estate development priorities.

In 2006, the Qatari Diar Real Estate Investment Company signed a contract with SUEZ, to design, build and operate for 10 years the wastewater reuse plant for the seaside, residential and commercial real estate development project in Lusail.

This 60,000 m³/day wastewater plant is equipped with the first biological membrane reactor, Ultrafor™, ever sold by SUEZ in the Persian Gulf. The contract involves the installation of a 12 kilometers collection system to carry wastewater from the new city to the purification station.

The water recycled by this plant makes it possible to introduce vegetation to desert parcels of land and to maintain green spaces throughout the artificial Pearl Island.

This contract was realized in Joint Venture with MARUBENI Corp. in charge of the design and built of the pumping stations, distribution network and collectors, and with Mushrif TCC for the Civil Works.





water line

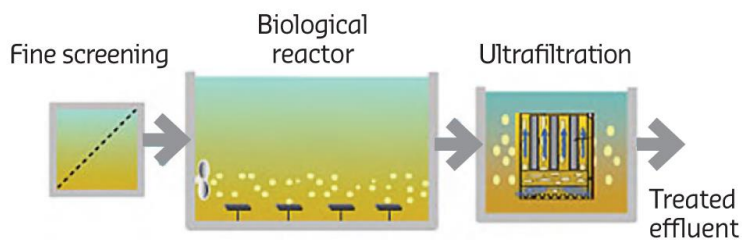


the pretreatment includes :

- screening (10 mm),
- equalization (buffer tank – 10,000 m³),
- fine screening (1 mm),
- grease removal and cooling

secondary treatment with Ultrafor™ MBR membrane bioreactor

The MBR process combines biological purification using activated sludge with ultrafiltration membrane clarification. The hollow fiber membranes creates a true physical barrier for the elimination of bacteria, and helminthic eggs, and a reduction in fecal coliforms.



chlorination (1,250 m³)



Ultrafor™

it's advantages

performance

- Guarantee the water quality beyond the highest standard

sustainable development

- Protects nature and its biodiversity with an effluent quality that allows discharge in protected zones
- Population protection with a guarantee of sanitation safety
- Protection of resources thanks to the option of reusing effluent to specific need
- Compact size reduces the environmental footprint

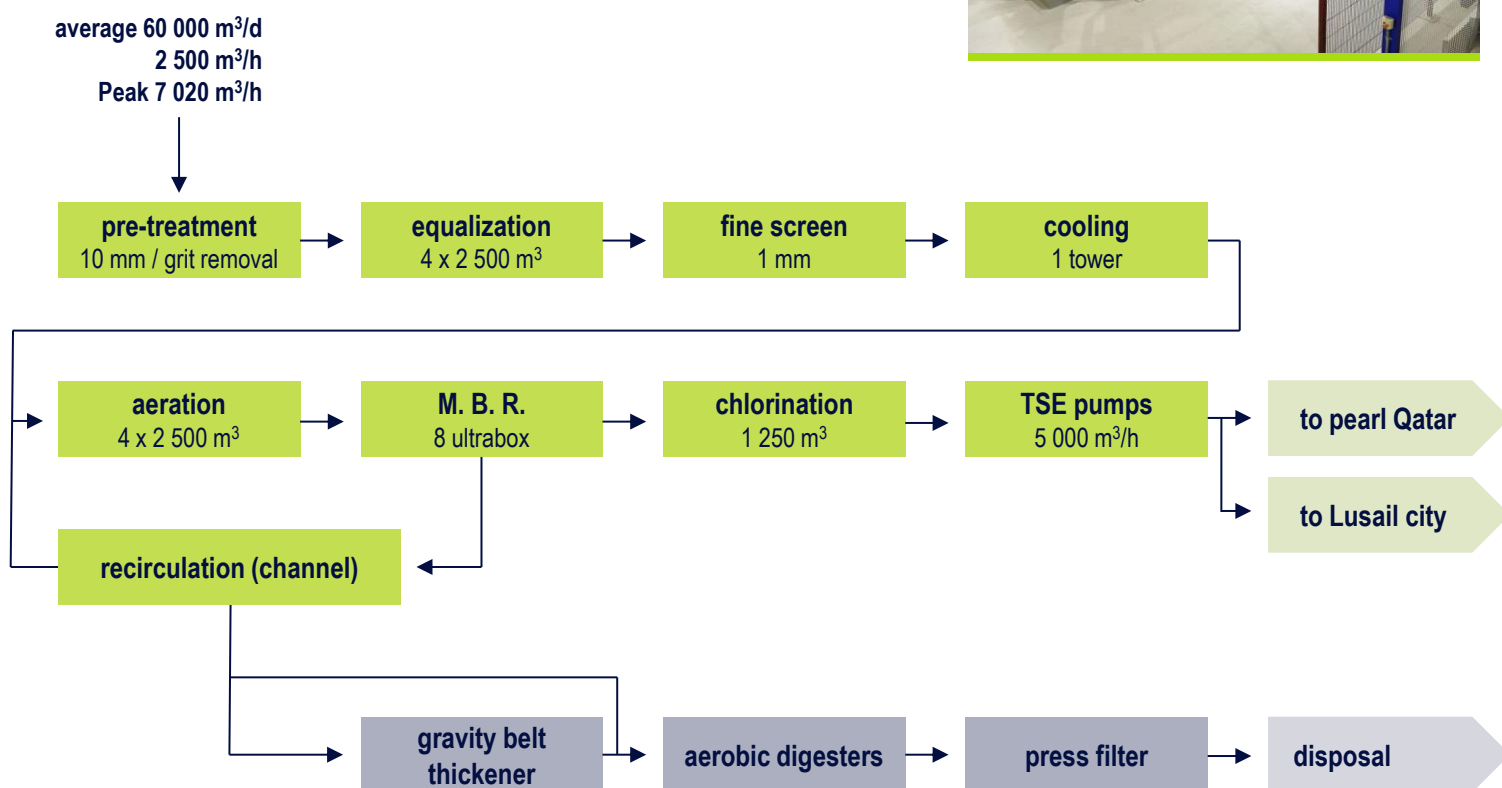
safety

- A totally automated operation assures the safety of operating partners

sludge line

sludge is also extensively treated by :

- Gravity Belt Thickening (GBT) of biological sludge
- Aerobic Digestion : mesophilic aerobic stabilization (total volume: 11,600 m³/d), digested sludge tank
- Dewatering on filter presses



air treatment

Biological odour removal with physico-chemical treatment on Azurair® C (acids, bleach, sodium hydroxide, thiosulphate or bisulphite) combined with Azurair® B (biological process on Biolite®) to reduce the cost of reagents.

Lusail City, one of the most ambitious and groundbreaking concepts of Qatari Diar Real Estate Investment Company, is a new waterfront city being built in Qatar that is intended to be the biggest domestic real estate development in the country. It will cover an area of 35 million square meters and be located north of Qatar's capital city of Doha, next to The Pearl Island.

Lusail City accommodates 200,000 residents and 170,000 employees ; it will also welcome over 80,000 visitors. The total estimated population of Lusail will eventually reach 450,000 people.



stakeholders

Client :
**Qatari Diar Real Estate
Investment Company**

Consulting Engineer :
Parsons / Hyder Consulting

Type of partnering :
**JV SUEZ (main contractor),
Marubeni-Japan, Mushrif-Kuwait**

Marubeni : mechanical and electrical works of 2 pump stations (Peak Flow: 160,000 m³/day), procurement of pipe materials for sewer pipeline (20km) and 10 years operation and maintenance of 2 pump stations.

SUEZ : mechanical and electrical works of new sewage treatment plant (60,000m³/day) and 10 years operation and maintenance works of the sewage treatment plant

Mushrif : civil works and pipe laying works.



O&M performances

- From commissioning to the date of power supply the plant has been successfully powered 24/24 by generators despite difficult weather conditions (during summer temperature can reach event up to 46°C with high humidity).
- 100% of conformity** for all parameters including suspended solids, BOD₅, COD with a raw water quality lower than the contractual data.

key dates

construction period

- construction starting date :
from December 2005 to March 2010
- end of construction :
2008
- effective date of taking over :
July 2013
- defect liability period expiring on August
2014

After several years of cocooning and the impossibility to start the plant in the absence of effluent (the new city of Lusail wasn't built yet), the plant has been successfully commissioned end June 2013

ten-years O&M contract

- from July 2013 to June 2023

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Since March 2015, all the Group brands (Degrémond, 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 **degrémond®**.

