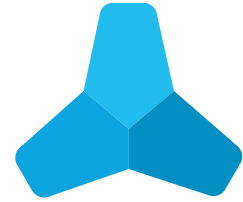


# SIDI BERNOUSSI SUBMARINE OUTFALL, CASABLANCA

2.400 m long outfall with internal  
diameter of 2.100 mm



**ETERMAR**

CLIENT

**LYDEC** – Lyonnaise des Eaux Casablanca





## Sidi Bernoussi Submarine Outfall, Casablanca – Morocco

CONSTRUCTION TIME

34 MONTHS

### DESCRIPTION

Outfall for treated effluents composed by one section in tunnel with reinforced concrete pipe with steel core and a section in HDPE, with a maximum debt of 11m<sup>3</sup>/s at 6 bars.

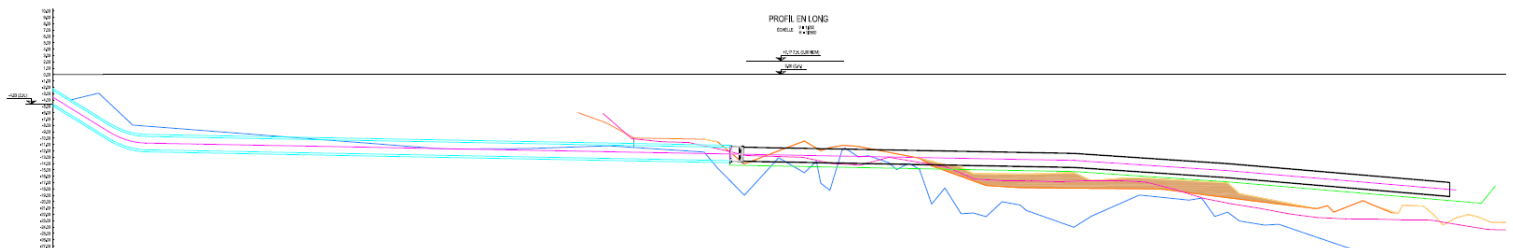
#### Tunnel section:

Tunnel executed by Microtunneling Boring Machine with 1.057 m long and 2.750 mm of diameter for pipes with external diameter of 2.670 mm and internal of 2.100 mm. the jacking pit for MBM was 12 m of diameter and 14,5 m deep.

A geotechnical survey (bathymetry, seismic reflexion and refraction and mechanical survey) was carried out in order to know the main parameters of the ground as they are critical in that type of marine works.

#### HDPE section:

Work executed by classical marine works (dredging, rock excavation, pipe immersion and blasting) with 1.343 m of length part buried in trench and the final part installed on the sea bed stabilized by its own weight, concrete ballast rings and by the diffuser that is fixed at the sea bed.



# ETERMAR