

CASE STUDY

DOUAR TAZART, TAROUDANT

2018

Distributor **DBO Maroc**

Project Installation of a watertight System O)) for 5 houses and 100 cows

Treatment Capacity **3,000 L/day**

Soil Analysis **NA**

System Surface Area **42 m²**

Particularities of the Site The treated wastewater will be recovered and reused to irrigate vegetation.

Treatment results are available upon request.



The distribution set-up of the System O))

BACKGROUND

The Douar Tazart Taroudant project is a wastewater treatment system installed in a village in Morocco. The system is designed to treat the wastewater of 25 people living in 5 houses, and a barn with 100 cows. The treated wastewater is recovered and reused to irrigate vegetation.



PRIMARY TREATMENT

The watertight System O)) is preceded by a primary treatment. Raw wastewater leaving the buildings is collected in a precast septic tank with an effective volume of 10,000 L. Inside the septic tank, the wastewater separates into layers as the fats float to the top and the solids sink to the bottom of the tank.

DISTRIBUTION

The effluent of the septic tank flows by gravity into a distribution box where it is then distributed evenly into two more distribution boxes. Each of these distribution boxes feeds five Advanced Enviro))Septic pipe rows. The proper functioning of the System O)) depends on a uniform distribution of wastewater between the Advanced Enviro))Septic pipe rows. The effluent of the system is recovered in a holding tank to be reused as irrigation, for an orange plantation



The connected AES pipes



ADVANCED SECONDARY TREATMENT

This Watertight System O)) uses one cell consisting of 10 rows of Advanced Enviro))Septic pipes. The wastewater flows along the length of the rows where it is treated by bacteria living in the pipes and in the filter sand during the infiltration process.

RECOVERY OF TREATED WATER

Underneath the System O)), there is a watertight membrane and a network of collection pipes. All of the water that is treated by the System O)) is recuperated by this network and directed towards a pumping station where it is then pumped into a recovered water holding tank. The water in this tank can then be used for irrigation.



ECONOMIC ADVANTAGES

By using a watertight System O)), the client saves money in the long term. A System O)) costs roughly the same as a conventional system, but has a lifespan of over 30 years. Conventional installations can start to fail after 15 years even if they are treated well. The farmers in Morocco pay roughly US \$17 to irrigate one hectare of land with one inch of water. This cost accumulates quickly and cuts into the profit margins of the farmer. The Advanced Enviro)) Septic system does not clog and therefore will provide these farmers with a source of irrigation for years to come.



ENVIRONMENTAL ADVANTAGES

Only 13% of the wastewater that is collected in Morocco is treated. There is a scarcity of drinking water in Morocco and the water available is often contaminated with untreated wastewater.

Purification performance well below the country's standards:

- Less than 30mg/L of BOD5 (5-day biochemical oxygen demand)
- Less than 25mg/L of suspended solids (SS)

The treatment process of a conventional installation occurs in the native soil, while System O)) treats the wastewater within the system, protecting the native soil and the local water supply.



Covering the AES pipes and watertight membrane with filter sand and backfill