CASE STUDY

INTEGRATION CENTER FOR ABANDONED CHILDREN

2018

Distributor	**Eco Agua America SAC**
Project	Installation of a watertight System O)) at an orphanage in Peru
Treatment Capacity	**12,000 L/Day**
Soil Analysis	**Impermeable**
System Surface Area	**207.3 m²**
Particularities of the Site	Being operated by a not-for-profit organization in Peru, what was needed was a wastewater treatment system that doesn't require any maintenance or have breakable parts.

Treatment results available upon request.

Septic tank

BACKGROUND

This project is the installation of a watertight System O)) at a center for children and adolescents who live on the streets or who are in high risk situations and require rehabilitation. The system was de-signed to passively treat and recover the wastewater. The treated wastewater is recovered and held in a holding tank to be used to irrigate green spaces. With no moving parts or filter media to replace or break, the watertight System O)) was the most cost-effective, long-lasting and efficient option.

PRIMARY TREATMENT

The System O)) is preceded by a primary treatment. Raw wastewater leaving the center is collected in a septic tank with an effective volume of 18,000 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 main distribution box that evenly distributes effluent to four other distribution boxes. Each of these four distribution boxes distributes wastewater evenly into five rows of Advanced Enviro))Septic pipes. The proper functioning functioning of the System O)) depends on a uniform distribution of wastewater between the Advanced Enviro))Septic pipe rows. This is achieved with the help of equalizers installed inside the distribution box. These equalizers have weirs that are manually adjusted by a dial during the installation. These are the only moveable parts in the en-tire system. Once they are set during the installation, they don't need to be adjusted again. The treated effluent of the system is recovered and collected in a holding tank to be reused.

Installation of the Advanced Enviro))Septic pipes

Installation of the distribution boxes

System O

DBO INTERNATIONAL

CASE STUDY INTEGRATION CENTER FOR ABANDONED CHILDREN

ADVANCED SECONDARY TREATMENT

This waterlight System O)) uses one cell consisting of 20 rows of Advanced Enviro))Septic (AES) pipes for a total of 100 pipes. The wastewater flows along the length of the AES rows where it is treated by bacteria living in the AES 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

Previously, with the conventional system, everything was automated until the equipment electromechanical equipment begins to fail, and the plant has ceased to operate with the consequent problem of contamination of water unsuitable for reuse. What's more, the System O installation)) does not require any maintenance and there is no filter media to change or mechanical part that can break. Today, since the installation of our SystemO)) in 2018, the client was able to save up to 80% in drinking water and electricity.

TREATMENT RESULTS

Prameters	Resultados
Suspended matter	<3 mg/l
Biochemical oxygen demand	13.9 mg/ l
Total fecal coliforms	790 ufc / 100 ml

The treatment process of a conven-tional installation occurs in the native soil, while System O)) treats the wastewater within the system, protecting the native soil.

Gravity fed distribution box

Holding tank for treated water

Treated wastewater

Wastewater treatment plant at the end of the installation

System O)) DBO INTERNATIONAL