



Application Case Studies

Sea Water Desalination – Potable Water

Challenge

Facing challenges of clean water shortages in Tekoradi, Ghana with the burgeoning oil/gas sector in the area offshore, something had to be done to increase clean water supply to supply the growing needs of both the military base at Tekoradi and the surrounding community.

Solution

Knowing the water demands were increasing, Genesis Water Technologies was engaged by our partner Best Blend Ghana and the Ghana military to design, engineer and build an optimized sea water desalination system solution. This system solution needed to be environmental sensitive to the local marine environment.

Genesis Water Technologies engineered and designed a custom built GWT series modular desalination system. This system includes an advanced open sea water intake system and outfall designed to drastically minimize any potentially effects to the marine environment from its intake and brine discharge. The water from the intake system is pumped to an inlet water storage tank. From the water storage tank, the water is processed through a multi-stage filtration process and then into a sea water reverse osmosis system. The sea water desalination system was designed using a patented process of DLP series nanofiber prefiltration and nano composite membrane technology to remove colloidal organics, biofouling, and dissolved salts. Following this process, the water is remineralized to improve taste and is sent to treated water storage tanks. The water is disinfected post tank for water distribution.

Results

The system is expected to be implemented in phases in 2015 with initial water quality exceeding all US EPA and WHO standards for potable water.

This system solution will provide a safe source of potable water for many years to come to meets the water needs of the area with the ability to easily add capacity as needed into the future.