

CASE STUDY



PROJECT POTABLE WATER AND SEWAGE TREATMENT FOR LNG PROJECT

PRODUCT Ultrafiltration Plant and Membrane Bioreactor

INDUSTRY Oil and Gas

LOCATION Port Moresby, Papua New Guinea

BACKGROUND

Exxon Mobil's PNG LNG Project required a Potable Water Treatment Plant (PWTP) and a Wastewater Treatment Plant (WWTP) to service the 630 man permanent facilities compound in Port Moresby.

Recognising MAK Water's expertise in design and manufacture of high quality, fully automated, packaged water and sewage treatment plants for Oil and Gas projects, the construction contractor engaged MAK Water to design and construct the plants. Further to the offsite manufacture and supply of the plants, site installation and commissioning assistance, and a service agreement to support the facility operator were also provided.

SOLUTION

A containerised Ultrafiltration (UF) plant to produce 165 m³/day of potable water, and a containerised 500 m³/day membrane bioreactor (MBR) sewage treatment plant.

POTABLE WATER TREATMENT PLANT

- Containerised UF plant with two 100% trains
- Raw water pH correction and chlorination systems
- Treated water hardness and chlorination systems

WASTEWATER TREATMENT PLANT

- Containerised MBR plant with two 50% trains
- On-board sludge dewatering and drying >70% Dry Matter (DM)
- Odour control and auto-membrane integrity testing

DESIGN FEATURES

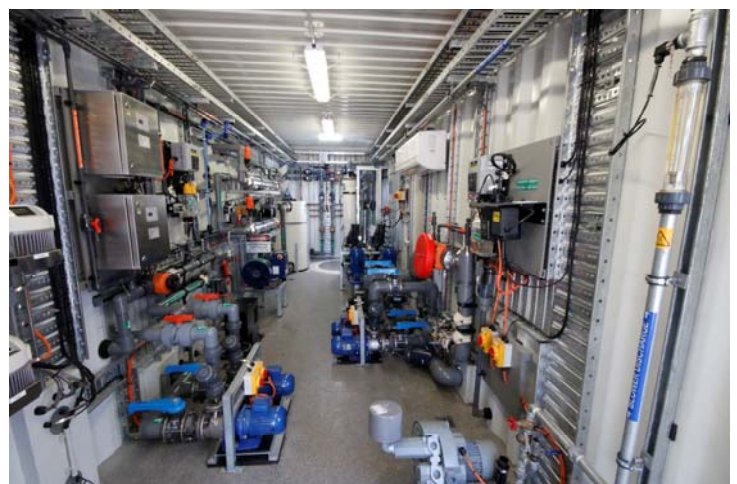
- 30 year structural design life
- 20 year mechanical and electrical design life
- Seismic design to Section 8 of AS1170.4: 2007

RESULTS AND BENEFITS

- **Ease of installation.** Prefabricated interconnecting piping and cabling, for easy reassembly on site.
- **Safe and compliant.** Safe and reliable potable water supply and treated effluent for guaranteed compliance.
- **Training and operational support.** Comprehensive training and documentation was provided and remote monitoring and routine service visits guaranteed the ongoing performance of the plants.



Membrane Bioreactor Sewage Treatment Plant installed on site in Port Moresby



PNG LNG Project Ultrafiltration Plant undergoes Factory Acceptance Testing at the MAK Water workshop