

CASE STUDY



PROJECT POTABLE WATER FOR OFFSHORE OIL PLATFORM

PRODUCT Sea Water Reverse Osmosis Plant
INDUSTRY Oil and Gas
LOCATION North West Shelf, Western Australia

BACKGROUND

As a long-term supplier to Australia's largest publicly traded oil and gas exploration and Production Company, MAK Water was invited to bid for the design and construction of a new reverse osmosis (RO) plant for the Goodwyn A (GWA) Platform, located 135 km north-west of Karratha, offshore of Western Australia.

Located above deck in a Zone 2 Hazardous Area, the RO plant was designed to fully comply with the client's offshore engineering standards and specifications, built using client preferred mechanical and electrical equipment, and supplied with a comprehensive vendor data and documentation package.

SOLUTION

MAK Water designed and manufactured a skid mounted Sea Water Reverse Osmosis (SWRO) Plant, to produce 40 m³/day of potable water, suitable for installation above deck in a Zone 2 Hazardous Area.

PROJECT CHALLENGES

- Limited available footprint
- Zone 2 Hazardous Area (Programmable Logic Controller (PLC) was remote mounted)
- Client preferred mechanical and electrical equipment

ENGINEERING AND DESIGN REQUIREMENTS

- HAZOP, Safety in Design, Constructability and Operability Studies
- Dynamic structural analysis and certified lifting points
- Third party hazardous area certification

QUALITY AND DOCUMENTATION REQUIREMENTS

- Inspection Test Plan (ITP) with witness/hold points, Factory Acceptance Test and Site Acceptance Test
- Material traceability (Positive Material Identification (PMI) reports and mill certificates)
- Comprehensive supplier documentation package

RESULTS AND BENEFITS

- **Compact design.** Plant was able to fit into the required footprint, and was easily installed on site.
- **Fully compliant.** High quality plant built to client's stringent offshore specifications.
- **Self-sufficient.** Eliminates reliance on bunkering tankers for potable water supply.



The sea water reverse osmosis plant undergoes factory acceptance testing



The sea water reverse osmosis plant installed on site on the offshore Goodwyn A oil platform