

CASE STUDY

PROJECT POTABLE WATER AND SEWAGE TREATMENT FOR IRON ORE MINE CAMP

PRODUCT Brackish Water Reverse Osmosis (BWRO) and Membrane Bioreactor (MBR)

INDUSTRY Mining

LOCATION Pilbara, Western Australia



BACKGROUND

A Tier 1 mining company was set to construct a world class 500-room FIFO mining camp with resort-like rooms and multi-purpose courts for basketball, tennis and volleyball, a football oval with goal posts, cricket nets, a mini golf course, a fitness park with outdoor gym facilities and a wellness loop with running track.

MAK Water has been a long term and trusted supplier to this client, and we worked cooperatively with their internal project delivery team during the budgeting phase. Once the project was given the go-ahead, MAK Water was subsequently awarded the contract to design, manufacture, supply and commission both the potable water plant and sewage treatment plant to serve the large camp.

SOLUTION

Potable water plant comprising 240 kL/day brackish water reverse osmosis and a 200 kL/day Membrane Bioreactor.

Follow [this link to watch](#) a video tour of the potable water treatment plant on the MAK Water YouTube Channel.

ENGINEERING AND DESIGN REQUIREMENTS

- Detailed 3D modelling for human factors engineering
- Client specific drawing & data package
- Compliant with client preferred specifications
- Premium Instrumentation package with ClearAccess remote monitoring
- Insulated & air conditioned for hot Pilbara climate

CONTAINERISED POTABLE WATER PLANT

- pH correction, disinfection and anti-scalant dosing
- Two stage brackish water reverse osmosis (BWRO)
- Separate after-treatment and distribution pump setups for potable and irrigation streams

SEWAGE TREATMENT PLANT

- Inlet works/screening, with flow balancing and mixing
- Corrosion resistant PE bioreactors, with aerobic, anoxic and MBR zones
- Containerised ancillary equipment and control system

RESULTS AND BENEFITS

- **Informed Buyer Model.** A fit-for-purpose solution that complies with client specifications in a commercially sensible manner.
- **Pre-tested, modular design.** Plants were fully assembled and factory tested, and supplied with prefabricated interconnecting piping and cabling for easy site installation.
- **Lowest operating cost.** Plants were designed to minimise operator intervention, and fitted with remote monitoring and control capabilities.



Drone picture of the MAK Water treatment plants during installation on site



Internal view of the containerised BWRO plant



Form-4 mine-spec control panel to client specifications