

CASE STUDY



PROJECT	FACILITIES MANAGEMENT FOR NICKEL MINE
PRODUCT	Lamella Clarifier (LC), Seawater Reverse Osmosis (SWRO)
INDUSTRY	Mining
LOCATION	Goldfields-Esperance Region, Western Australia

BACKGROUND

The owner of a nickel mine in the Fraser Range area of Western Australia required assistance with upgrade of the existing water infrastructure to provide a more reliable supply for both potable water and process water to the accommodation village, mine site facilities and process plant. The bore water feed to the RO plants had deteriorated considerably causing membrane fouling, equipment damage, high service costs and ongoing plant downtime.

MAK Water was engaged by the owner to provide a quick solution to fix the problem and ensure a more reliable water supply to the site. This included long term hire of multiple water treatment plants and an Operations Agreement to provide plant operators to maintain and operate all of the water treatment plants onsite.

The Operations Agreement is for the provision of plant operation, technical support, onsite maintenance (both planned and emergency), and the supply of consumables required for normal plant operation.

PLANT OPERATION

Site based Plant Operators to take responsibility for daily plant operation and maintenance. 24-7 site coverage provided using two (2) Plant Operators each doing 12 hour shifts (day/night).

Services include:

- Operate and maintain the WTP to achieve agreed KPI's
- Set process and discharge monitoring & analyses warning and action levels
- Assist client in the preparation of annual capital and operational cost estimates
- Assist client facilities and utilities staff in emergency situations and shutdowns
- Propose process design changes to improve performance, reliability and operating cost
- Review process design to ascertain KPI performance indicators
- Implement operating, training and development procedures



SWRO and LC plant installed onsite

SITE MANAGEMENT & PERFORMANCE REPORTING

Operations Supervisor/Manager to monitor performance, including:

- Consultancy services including overview for WTP operations, collection, collation, assessment and reporting of plant performance data
- Quarterly operational audit reviews and produce audit reports with proposed corrective and preventive actions
- Provide cost estimating for any capital expenditures proposed for the WTP
- Support the client in interacting with the environmental agencies on water matters related to the WTP including permits, and collaborate with the client on overall environmental liability management.
- Adopt and improve where possible, the existing operating procedures
- Assist in the preparation of a long-term treatment strategy for the plant



Containerised SWRO plant

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PLANNED MAINTENANCE

Site based Plant Operator will schedule and execute routine plant maintenance with the scope of work dependent on whether the maintenance includes monthly, quarterly, six monthly or annual servicing.

OPERATIONAL EQUIPMENT

Additional equipment provided by MAK Water to support facilities management includes:

- Office and laboratory
- Laboratory equipment and instrumentation
- Spare parts storage container

EQUIPMENT SOLUTION

Containerised Sea Water Reverse Osmosis (SWRO) hire plant with pre-treatment package including Lamella Clarifiers (LC).

CUSTOM RO PRE-TREATMENT PACKAGE

- Oxidisation skid, flocculation and dosing skids, lamella clarifiers with containerised automatic polymer dosing station
- Fast 4 week delivery time
- Onsite installation support and plant commissioning

OPERATIONAL SUPPORT

Operational Specialist to provide operational support during the project implementation phase, including:

- Installation and commissioning assistance
- Plant performance optimisation
- System integration
- Site procedures
- Supervision of 2 client plant operators and existing WTP's onsite



SWRO plant installed onsite



Containerised plants onsite



Site based Plant Operator