



Case Study

Mining Industry

1.5MLD emergency water treatment plant



Problem Statement

Exxaro Belfast Coal Mine had a positive water balance, with an excess of 1.5MLD. The excess water, which was high in TDS, conductivity and sulphates, was being contained in pollution control dams above the mine. An emergency plant was needed to solve the problem immediately, while a long-term solution is investigated.

Solution

Watericon was given a timeline of 8 weeks to design, build, install and commission the emergency mobile water treatment plant. Water stored in the pollution control dams will be pumped to the mobile plant for treatment, before being discharged into a nearby river. Watericon made use of self-cleaning strainer (VAF) and reverse osmosis (RO) technology. The VAF unit removes any solid particles that may be in the pollution control dams and the RO units reduce the TDS count and sulphate concentration. 1.5 MLD of water is discharged to a nearby river, and is well within specification of the mine's water use license. Watericon will be operating the plant for a minimum of 6 months with the option to extend should the need arise.



Typical Plant Feed

- pH – 7-8
- TDS – 530-580 mg/L
- TSS – 0.5-15 mg/L
- Turbidity – 1-5 NTU
- Conductivity – 80-100mS/m
- Sulphate – 300-400mg/L



Performance Target

Project Timeline – 8 weeks

- pH – 6.5-8.5
- TDS < 100 mg/L
- TSS < 25mg/L
- Turbidity < 1NTU
- Conductivity < 40 mS/m
- Sulphate < 200 mg/L



Process

- pH correction
- Biocide
- VAF (Self-cleaning Strainer)
- RO (Reverse Osmosis)



Innovation

Since implementing the new treatment system our client has the benefit of:

- Comply with the mine's water use license
- No overflowing of the pollution control dams
- Being sustainable while investigating a long-term solution



13 June 2023

REF: REFERENCE LETTER FOR THE WATER TREATMENT PLANT AND OPERATIONS FROM WATERICON

TO WHOM IT MAY CONCERN

With respect and appreciation, as a happy customer, I am writing this reference letter on behalf of the Exxaro group.

One of our sites required a water treatment plant as a matter of urgency to treat our dam water to meet compliance regulations. Timelines were stringent, site conditions for installation and commissioning were not very comfortable at the time of the installation. Watericon managed to quote a competitive price with the timeline that matched our requirements.

From the design, built, install, commission and operation, Watericon has shown us their passion and professionalism for the water treatment technology, precise engineering practice, and an extremely efficient and supportive day to day operational system.

Exxaro is enjoying every minute of working with Watericon. And thus, would like to recommend Watericon to any company in the Mining and any other industry that requires water treatment solutions, equipment or services.

With Best Regards,

Mzuvukile Matanzima

Signed by: Mzuvukile
Signed at: 2023-06-14 19:36:36 +02:00

Mzuvukile

Project Manager

Belfast Coal

exxaro

