

CASE STUDY



PROJECT CLARIFICATION PRETREATMENT FOR DEFENCE

PRODUCT Lamella Clarifier (LC)

INDUSTRY Defence

LOCATION Puckapunyal, Victoria

BACKGROUND

Our client was experiencing significant operational challenges due to turbidity spikes in river water extraction during heavy rainfall events. The existing water treatment plant (WTP) was unable to operate under high turbidity conditions, resulting in frequent shutdowns that disrupted site operations.

These shutdowns increased operational costs, reduced productivity, and posed compliance and sustainability risks by limiting access to reliable, treated water during critical periods.

SOLUTION

MAK Water worked closely with the client to design a robust and reliable pretreatment solution capable of managing high turbidity events. By collaborating throughout the design and engineering stages, we delivered a high-flow clarifier system tailored to the site's hydraulic and environmental conditions. Complemented by custom chemical dosing systems and simplified maintenance access, the solution ensures continuous water availability, operational resilience, and improved water quality assurance.

MAK WATER KEY SOLUTIONS

- 120–150 m³/hr stainless steel 316 clarifier
- Coagulation, flocculant, and two-way pH correction chemical dosing systems, complete with fully bunded containment.
- Custom Allen-Bradley PLC/HMI control system housed in an SS316 control panel for reliable automation and process visibility.
- Detailed custom documentation package supporting operation, maintenance, and compliance.
- Galvanised steel access platform and staircase engineered to AS1657 for operator safety and ease of use.



Lamella Clarifier

RESULTS AND BENEFITS

- **Water security.** Robust pretreatment ensures reliable operation during high turbidity events, enabling uninterrupted site activities.
- **Long-term asset performance.** Clarifier engineered with a 20-year design life, reducing lifecycle costs and supporting long-term sustainability.
- **Operational efficiency.** Operator-friendly layout with safe access stairs and platform, minimising manual handling and streamlining maintenance tasks.
- **Sustainability and resilience.** Improved process stability reduces environmental impact and enhances long-term water stewardship across the site.



Lamella Clarifier in transit to site