



INTEGRATED ZLD & WATER REUSE SOLUTION FOR MAJOR INDUSTRIAL OPERATION

SWIPE 

PROJECT OVERVIEW

WOG Technologies designed and executed a complete water and wastewater treatment solution for an industrial facility operated by leading industrial facility in Southeast Asia. The project focused on advanced treatment and reuse, with a strong emphasis on reducing TDS, achieving near-zero liquid discharge (ZLD), & meeting stringent environmental regulations.

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CLIENT OVERVIEW

Required a high-efficiency treatment solution capable of handling challenging feedwater and effluent characteristics. The facility needed to manage elevated TDS and suspended solids in both raw water and wastewater, with goals of regulatory compliance, water reuse, and minimal environmental discharge.

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CHALLENGES

- High TDS (up to 54,000 ppm) and SS in process water and effluent
- Strict environmental norms requiring near-zero liquid discharge
- Need for reliable, high capacity treatment with consistent performance
- Integration of both freshwater treatment and effluent recovery under one system

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SOLUTIONS

WOG Technologies implemented a three-tier treatment solution:

- Water Treatment System (MMF-ACF-RO-MB)
Designed to treat incoming raw water by reducing TDS and SS, delivering ultra-pure water for industrial use.
- Effluent Treatment Plant – ZLD (EQT-PC-DMF-UF-RO-MEE)

An integrated zero-liquid discharge system that treats high-strength effluent, significantly lowering TDS, while enabling water recovery and reuse.

- Multi-Effect Evaporator (MEE)
Concentrates high-TDS reject streams and brings them down to minimizing liquid waste and enabling compliance with ZLD mandates.

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RESULT

| SYSTEM | FLOW (M ³ /DAY) | TDS |
|--------|-------------------------------|---------------|
| WTP | 4152 → 2424 | 550 → ≤5 |
| ETP | 1920 → 1857.6 | 1618 → ≤240 |
| MEE | 72 → 71.04 | 54,000 → <100 |

IMPACT

- Achieved ultra-pure water suitable for process reuse
- Delivered near-zero liquid discharge in line with sustainability mandates
- Ensured long-term regulatory compliance with reduced environmental impact
- Improved operational sustainability through maximum water recovery

