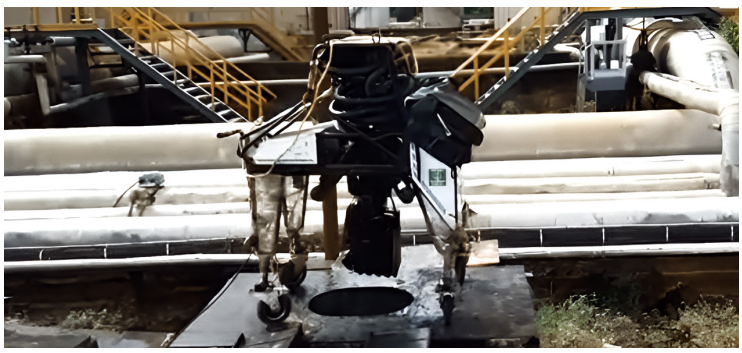
GENROBOTICS®

CASE STUDY :

MRPL MANGALORE REFINERY

Robotic Diagnosis & Restoration of Blocked OWS & SWS Networks Using Bandicoot



CLIENT :
Mangalore Refinery and Petrochemicals Ltd. (MRPL)

SECTOR:
Oil & Gas / Petrochemical Refinery

LOCATION :
Mangalore, Karnataka, India

ROBOTIC SOLUTION DEPLOYED:
Bandicoot Robot*

*Designed for confined space cleaning of pits and manholes in hazardous environments, Supported by Genrobotics' high-pressure jetting system.

PROJECT BACKGROUND

In 2021, MRPL encountered a critical issue—unexplained overflow in multiple OWS and SWS manholes. Despite using conventional methods like manual scavenging, jetting, and super-suction vehicles, the refinery team was unable to identify or resolve the root cause of the obstruction.

To address this, Genrobotics was brought in for a pilot diagnostic deployment using the Bandicoot robot.

2021 DEPLOYMENT – DIAGNOSTIC PHASE

SCOPE

- 50 manholes selected for robotic inspection and cleaning.

ACTION TAKEN

- All manholes cleaned using the Bandicoot robot.
- High-pressure jetting deployed to clear internal line blockages.

OUTCOME

- Root cause identified through robotic visual inspection.
- Obstructions removed.
- Entire OWS & SWS line restored to full operational flow within 30 days.

2025 – PHASE 2 DEPLOYMENT

Encouraged by the proven success in 2021, MRPL re-engaged Genrobotics in 2025 for a second plant experiencing similar overflow issues. Using the same integrated robotic + jetting approach, the problem was diagnosed and fully resolved again — validating repeatability and scalability of the robotic intervention model.

CHALLENGES ADDRESSED

- Unknown internal blockages in critical treatment lines.
- Failed conventional methods.
- Overflow creating compliance and safety risks.
- Limited shutdown windows for rectification.

SOLUTIONS DELIVERED

- Pinpointed Blockages: Bandicoot's camera system enabled accurate fault detection.
- Fast Clearance: Robotic scooping + jetting resolved obstructions quickly.
- No Human Entry: Full remote operation ensured zero worker risk.
- 30-Day Turnaround: Complete restoration within operational deadlines.

OUTCOMES & BENEFITS

- Prevented environmental hazards due to overflow.
- Brought critical systems back online without excavation.
- Built MRPL's confidence in robotic maintenance strategy.
- Demonstrated superior ROI over traditional cleaning methods.