



# FPSO Integrated Inspection and Steel replacement: New Zealand

BW Offshore's Umuroa FPSO was first converted in Singapore in 2007 and has been in the Tui filed offshore waters of New Zealand since 2009. In line with ABS class requirements, K2 have been supporting its operation since 2010 to the present date, with an integrated inspection and hull repair programme.

### Project Scope

To conduct a Special Survey under ABS requirements to all Water Ballast Tanks (WBT) and Cargo Oil Tanks (COT), generate repair and inspection plans, and execute in-situ steel repairs to the hull. Throughout our campaign we have also performed extensive topside inspection works to both pressure vessels and process piping.

### Challenges

- Welding, Cutting & Grinding at Height.
- Working within confined spaces.
- Environmental constraints of rough seas and high winds in a seasonal country.

### Logistical Challenges

- Deploying multi-disciplined, experiences personnel – K2's NDT department was engaged to write project specific Water back Welding procedures for pitting repairs.
- Satisfying New Zealand Immigration and Unions of our personnel specialization in these skill sets.
- Limited material resources in New Zealand.

### K2 Approach

The remote, offshore location has provided logistical and sourcing difficulties both in terms of materials and manpower. K2's solution was an on the ground expansion, recruiting local staff and employing a dedicated Naval Architect for the project. Safety is our watchword. We mitigated the inherent risks of a combination of work at height, confined spaces and hotwork with a separation of project and safety management and with a dedicated safety manager on-site at all times.

### K2 Comments

"New Zealand has strict Union laws resulting in difficulties deploying manpower from Singapore. Our response was to expand our capabilities by recruiting locally." Barri Marshall, K2 IRM Manager.

### Client Feedback

"They went about their task in a thoroughly professional, efficient and most importantly safe manner. It was a pleasure to have worked with them all and hopefully will get the chance to again.

## Lifecycle Services for the Oil & Gas Industry

### Asset

FPSO Umuroa, 775000bbt  
Turret moored

### Owner

BW Offshore

### Location

Tui Field, New Zealand

### Duration

Ongoing contract from 2010

### K2's team

Naval Architect  
K2 NDT Department  
Rope Access qualified UT Inspectors  
Rope Access qualified MPI Hull Superintendants  
Rope Access qualified welders