



BLAKEMERE

Blakemere Engineering Pty Ltd
189 Planet Street | Welshpool WA 6106
www.blakemere.com.au

CLIENT BHP

LOCATION Griffin oil field, North-west Australia

PROJECT BACKGROUND

As part of decommissioning activities at BHP's Griffin oil and gas project a requirement was identified to extract a sample of steel spool from within a PLEM (pipeline end manifold). In order to re-establish a double-barrier system a pressure retaining plug needed to be installed in the spool at the location of the cut.

SOLUTION

Leveraging an extensive track record of bespoke pressure retaining plugs, a design was created that used a clamp to react the pressure-induced forces and an expanding seal to complete the isolation. Installation and all operations were undertaken by ROV, with no additional tooling required.

DELIVERY

Access within the PLEM structure was limited which presented the unique challenge of designing a plug that could be installed and operated in such restricted confines. It also posed challenges regarding the location and quality of cut that could be achieved, so the plug needed to be able to accommodate a variable interface, possibly on a curved section of spool.

INNOVATION, BENEFITS, ADVANTAGES

The prime challenge in this particular project was reacting the 2.5 tonnes of force generated by the pressure trying to expel the plug. Because the plug was installed in a cut end there were no features to hang on to. The solution was an integral clamp that reacted these forces, but allowed the plug to 'float' and therefore find the centre of the bore. This was crucial to the success of the seal given the variable nature of the interface.

The seal used was our unique, single piece expanding design with integral back-seal test ports. This design has the simplicity of a single seal with the added benefit of being able to verify the integrity of the seal via a back-seal test. This functionality typically requires a two seal system.

CASE STUDY /// BHP PR PLUGS



SUBSEA



MINING



ENERGY



BLAKEMERE

Blakemere Engineering Pty Ltd
189 Planet Street | Welshpool WA 6106
www.blakemere.com.au

QUOTE

"Proserv continues to be the supplier of choice when bespoke, pressure retaining plugs are required. This recent success further strengthens Proserv's position as the leader in this market." Linden Jones

CONCLUSION

This latest design further broadens Proserv's track record for developing bespoke plugs for any subsea application.

PHOTOS



CASE STUDY /// BHP PR PLUGS



BLAKEMERE

Blakemere Engineering Pty Ltd
189 Planet Street | Welshpool WA 6106
www.blakemere.com.au

BESPOKE PLUGS WE HAVE DEVELOPED

YEAR	CLIENT	WORK SCOPE	LOCATION
2018	BHP	8" spool plug, 5 bar, back-seal test port	Western Australia
2018	BHP	8" spool debris plug with environmental labyrinth seal	Western Australia
2018	DOF	6", 7" & 8" debris plug with environmental labyrinth seal	Western Australia
2018	Proserv (internal)	Subsea well low pressure housing flow-by port plugs to improve efficiency of down-hole cutting operations, variable sizes, 30 bar	Worldwide
2017	Fugro	4" & 8" debris plug with environmental labyrinth seal	Western Australia
2017	BHP	6" flowline debris plug	Western Australia
2016	Shell	3.6" concrete bore in subsea storage tank, 7 bar, downhole installation	North Sea UK
2016	BHP	5" Flowline and riser plug with labyrinth seal	Western Australia
2016	BHP	8" & 5" JSS connector decommissioning plugs, 110 bar, contingency restraint options, back seal test port, sour service, 10 year subsea life	Western Australia
2016	BHP	4", 6", 7", 8", 9" & 10" debris plugs with environmental labyrinth seal	Western Australia
2015	Heerema	18" inch debris plug with integral biocide stick compartment	Western Australia
2014	Technip	Torque interface debris plug with environmental labyrinth seal	Western Australia
2012	IKM Testing	6" spool plug, 3 bar, back seal test port	Western Australia

CASE STUDY /// BHP PR PLUGS