

# Casing leak – Fairview Field, Australia

Seal off the casing leak using ThermaSet® sealant.

## CHALLENGES

The candidate well identified for this operation was recently completed in March 2019. Shortly thereafter a leak was observed in the 5 ½" production casing across the Rewan formation located at 559.59 mMD. The leak was suspected to be sourced from a casing connection and traversed across the annular cement sheath thereby compromising the tubular integrity (Figure 1).

## OBJECTIVE

The planned ThermaSet® operation sought to remediate the casing leak through the placement of a balanced plug downhole on top of a previously set bridge plug. Once spotted, a prescribed volume of ThermaSet® would be squeezed into the leak path in a Bradenhead fashion and ultimately across the compromised annular cement based on the injectivity afforded.

Restoration of wellbore integrity was crucial for bringing the well on production following the frac operation that was executed directly prior to the ThermaSet® treatment.

## SOLUTION

The engineered solution prescribed a neat 1.03 SG ThermaSet® pill. Job execution is depicted in Figures 2-a and Figure 2-b and adhered to the sequence outlined below:

- Mix a 13.24 bbl. neat and solids-free ThermaSet® pill.
- Spot the pill downhole as a balanced plug and displace with fresh water.
- Proceeded to squeeze ThermaSet® into the leak in a Bradenhead fashion at an initial rate of 2.8 lpm at 2,500 psi.
- Squeeze pressure was maintained for the duration of the 06:15 hrs. gel time and a total of 1.44 bbls. resin was squeezed into the leak paths

## RESULT

Once the ThermaSet® was fully cured, the plug was tagged and the excess ThermaSet® was milled down to directly above the bridge plug (Figure 2-c). The 5-½" casing was then tested from surface to 1,350 psi with no recorded drop in pressure verifying a successful operation.

The pressure response of the well prior to the operation is illustrated in Figure 3. Figure 4 plots the post-operational pressure test where no decrease in pressure is observed validating the restoration of wellbore and annular integrity.

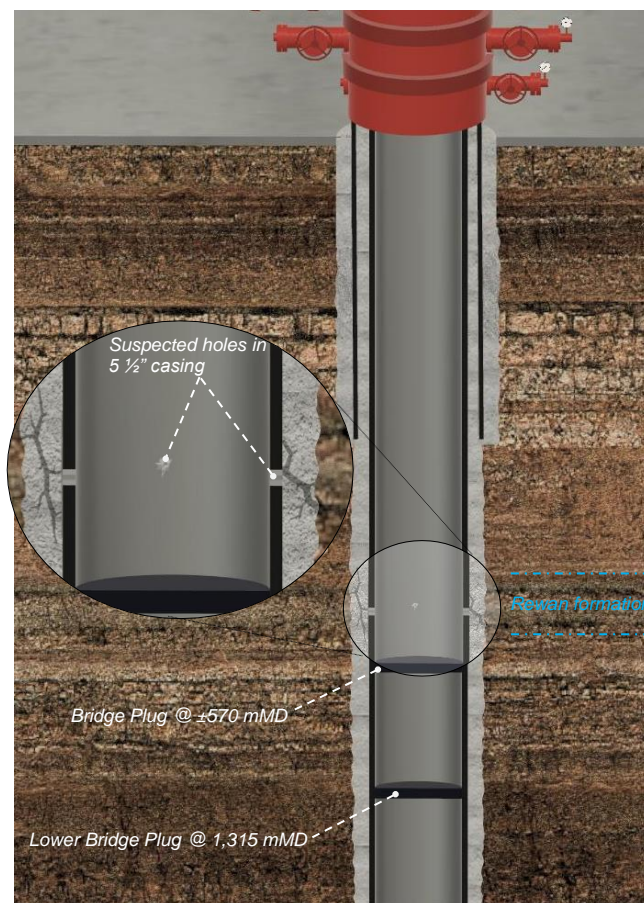
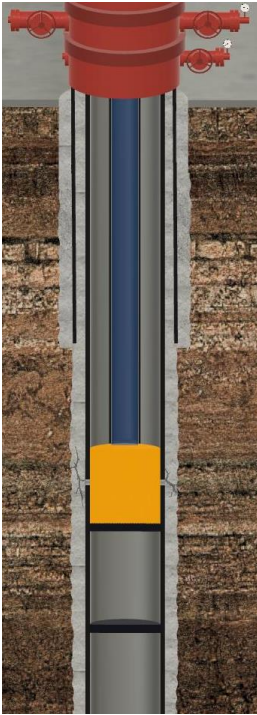


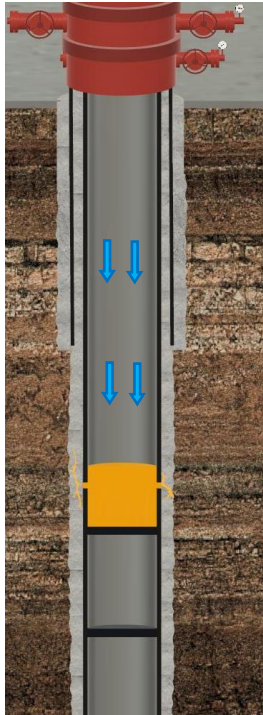
Figure 1 - Well status before ThermaSet® treatment



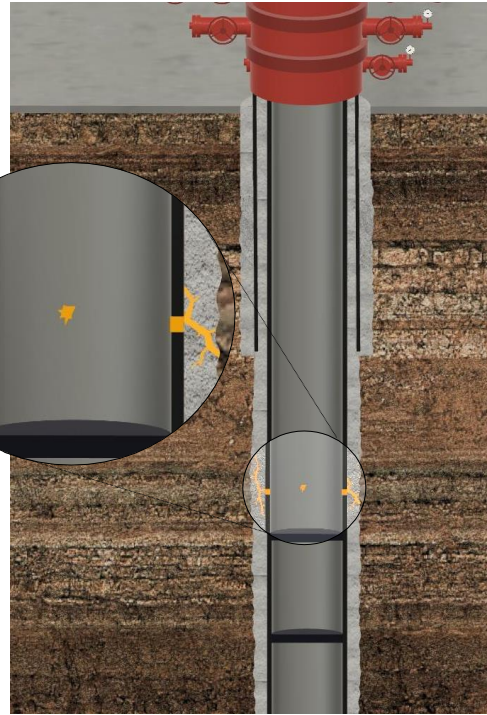
# Sequence of Operation



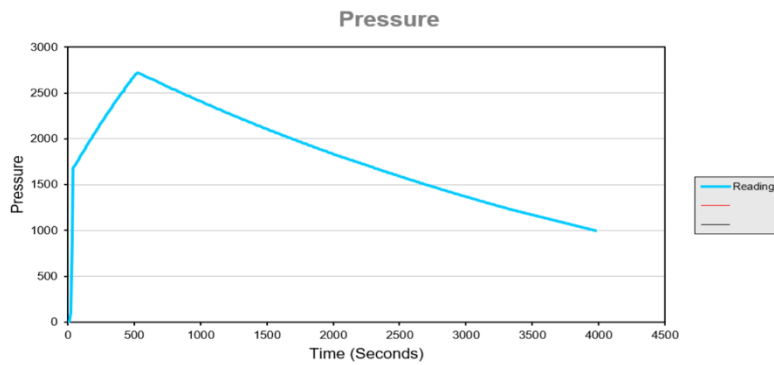
**Figure 2-a** Placed ThermaSet<sup>®</sup> pill (orange) on the bridge plug and displaced with water (blue).



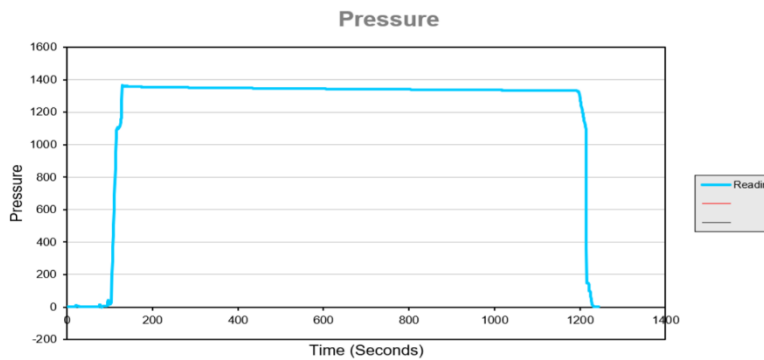
**Figure 2-b** Squeezed some ThermaSet<sup>®</sup> into the leak in a Bradenhead fashion.



**Figure 2-c** Milled ThermaSet<sup>®</sup> plug.



**Figure 3** Pre-operational pressure test



**Figure 4** Post-operational pressure test