

## Rawwater and Astrimar awarded Innovate UK funding

**Rawwater and Astrimar have been awarded Innovate UK funding for the qualification of bismuth plugs for well abandonment.**

Building on their previous experience applying bismuth alloy plugs to seal onshore wells, Rawwater is currently developing a range of bismuth alloys for onshore, offshore and subsea use. These are intended as a cost-effective alternative for sealing well abandonments and resealing failed abandonments that were previously plugged using cement. The application includes both casing plugs and plugs/seals in undefined and/or rough walled geometries (e.g. cap rock) that are difficult to seal with existing technologies such as cement.

Innovate UK is providing funding over 18 months to enable Rawwater to further develop and qualify advanced bismuth alloys for high pressure and high temperature applications. These will be for casting downhole to provide high integrity, cost-effective well sealing and meet industry life requirements. The funding also includes qualification testing to support demonstration of a plug life of the specified minimum of at least 3000 years.

As part of the initiative, Astrimar is developing predictive well integrity modelling software to forecast future plug performance, reflecting the specific downhole well and casing conditions and plug material behaviour. These predictions will support well risk assessments and provision of plug reliability assurance. In addition, Astrimar will be supporting the definition and analysis of Rawwater's qualification testing activities.

The work will be 70% funded by Innovate UK; Rawwater and Astrimar will fund the remaining 30%. Innovate UK is the UK Government's innovation agency. It works with people, companies and partner organisations to identify and drive forward the technology that will help grow the UK economy.

John Strutt, Astrimar Technical Director, said "We believe bismuth plugs have the potential to deliver a step change in well abandonment technology. The aim is to improve both the long term plug integrity and its assurance, as well as reducing the installation costs for offshore applications."