## Biocide for Produced Water

We will not use biocide for the water used for the commissioning and hydrostatic pressure testing of the LVI and the onshore pipeline.

We will use biocide to prevent biofilming of the umbilical tubes used to discharge treated produced water at the Corrib field. Note that the treated produced water will not be discharged at the outfall pipe.

The proposed biocide for treating the produced water is DBNPA (dibromo nitrile propionamide). This chemical is included in the revised EPA licence application for the terminal.

Injection will be on an intermittent basis of 2 hours per day at a dosage of 200 parts per million. This equates to just over 1 litre per day. This dosage is a maximum amount and the injection will optimized by monitoring and testing so actual quantities are likely to be less than this.

DBNPA decomposes by reaction with sulphites or bacteria and algae, ie it is bio-degradable, and by hydrolysis with water. This means that it starts to degrade immediately on application. The combined processes of bio-degradation and hydrolysis are very effective and will result in the complete degradation of DBNPA once discharged as part of the treated produced water stream at the subsea manifold.

Our assessment concluded that there would be no significant impact to the marine environment from the proposed discharge of biocide.

**Leak detection?**

It highly unlikely that a leak will occur because the umbilical tubes are corrosion resistant super duplex stainless steel and will not suffer corrosion. Every joint is welded and inspected with radioscopy and the complete line is pressure tested at more than 1.5 times design pressure.

Monitoring of the pump discharge pressures and treated produced water volumetric discharge rate relative to reference performance data will show up any leakage in the highly unlikely event that it occurred.