

# Warning: The Invisible Danger In Oil And Gas

## THE SOURCE AND RISKS OF MERCURY IN THE OFFSHORE INDUSTRY

Almost all oil and gas is found within the tiny spaces in sedimentary rocks, mainly sandstone and coarse-grained limestone. Bedrock limestone and sandstone, even though hard, also contain lots of pores that can contain water or oil or gas and other elements. Along with the gas and oil is a mixture of sand, silt & mud. This sludgy silt mud is rich in heavier metal elements including Uranium and Mercury. Even the heavy Uranium can be suspended in the product as it is drawn from the well. However because **mercury** exists naturally in **vapour form** it is readily drawn along with the gas product.

deposits are clearly seen. These deposits are formed of various elements that may contain heavy metals from Uranium ores to Mercury.

### The Risks Of Mercury When Breaking Containment

It is expected that the heavier elements from the sludge will be drawn up increasingly along with the product from older wells. These contaminants will be heavier metals like Uranium and Mercury. Recently on offshore installations when breaking containment in vessels, engineers have found deposits and small puddles of liquid mercury.



Where these contaminants end up in the plant depends on many factors. Mercury as suspended vapour in the product will act in the same way as many other oil and gas products. During fractional distillation temperature and pressure changes allow vapours to condense into selected by-products.

In the same way, certain vessels on the rig or in the refinery may lend the right conditions for vaporized Mercury to condense back into liquid. Here it will form as either small globules or in small puddles when collected in the base of pipes and vessels.

In the case of the heavier elements suspended in the product, over time these form scale that can be egg shell like or brown or grey to whitish slate like layers or even layered variations like tree rings. This can develop to heavier deposits such as in the pipe cross section shown below. Here deep layers of tree ring type

Mercury will evaporate and produce harmful vapours at relatively low temperatures. When a pressurised vessel that contains mercury droplets is depressurised, these vapours will start to be released.

When breaking confinement, even though a thorough gas test has proved there is no flammable gas present the vessel could still present a hazardous health risk from invisible mercury vapours.

ABLE offer portable Mercury analysers to determine the amount of Mercury vapour at any given location, please call us on +44 (0)118 9169407 or email [info@able.co.uk](mailto:info@able.co.uk)