

# Scalewatcher Application Note

## REPLACING SCALE INHIBITOR INJECTION CHEMICALS

A successful trial has taken place on the Unocal's Hoorn Platform in the North Sea replacing scale inhibitor injection chemicals with the Scalewatcher Electronic Descaling System.

In July 1993 the Scalewatcher System was installed on to the water process system. The purpose of the test was to verify the performance of the Scalewatcher System over a period of six months. Upon installation of the unit, the daily injection of 12 litres of scale inhibitor was stopped, a clean disperser placed in Wemco 3605, and a 75 mm spool piece checked on scale.

The following January Wemco 3605 was cleaned and checked at the following points:

- 1) Disperser (was clear of limescale)
- 2) 75 mm spool piece
- 3) 100 mm Wemco-outlet line to Closed Drain Tank
- 4) 200 mm butterfly-valve was removed to check outlet line
- 5) Level-control valves and valves of Wemco 3606

In comparison with previous inspections, when scale inhibitors were used, the above mentioned control items looked good having been operated for six months with one Wemco and an average flow of 36.000 BBLs/day.

Unocal stated that they had almost received a payback on the Scalewatcher during the six month trial and have now bought other Scalewatcher Systems for its other platforms.

# **TECHNICAL INNOVATION COMBINED WITH EXPERIENCE & EXPERTISE**

## **CASE STUDY**

### **PRODUCED WATER HANDING SYSTEM – OIL RIG**

Scalewatcher was installed on the Talisman Energy (UK)'s Clyde Platform in the North Sea. The unit was fitted on to a common 10" line immediately upstream of two produced water plate coolers and the main water treatment process system which handles around 68,000 bbl/water a day. Each cooler contained 100 titanium plates, complete with viton gaskets.

The high salinity content of the water causes very hard scale deposition consisting mainly of zinc sulphide but also has traces of carbonate. As a result, the coolers required cleaning every two months and necessitated the plates being returned to the manufacturers for cleaning. The hard scale also caused the upstream "witches hat" strainers to become blocked which rendered them unserviceable and demanded their regular replacement.

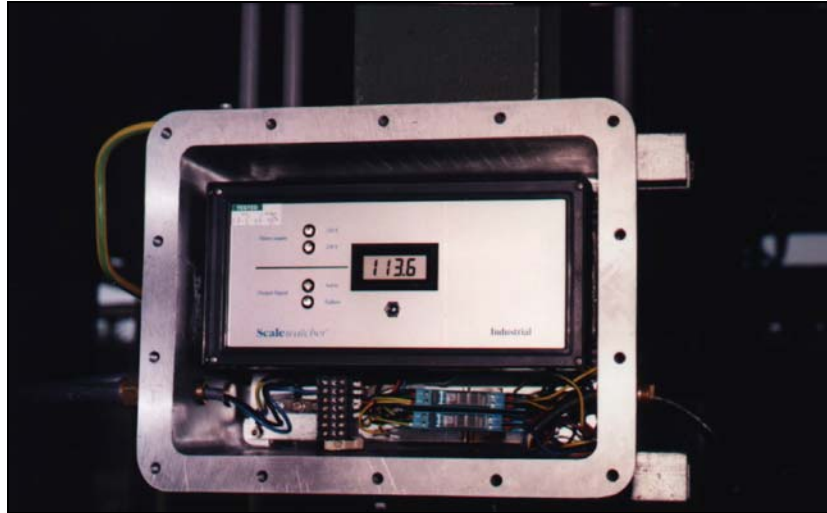
In addition, due to the descaling regime, the coolers had to be routinely acid back washed, which eventually would render the plates unserviceable. The acid washing also necessitated the fitting of coolers with more expensive viton gaskets.

The purpose of the trial was to determine if the Scalewatcher system could prevent or reduce the scale deposition within the plate coolers over a long term period. At the same time as the unit was fitted, the plant was modified reducing the number of titanium plates from 100 to 60 per cooler.

Following the installation of the unit and the reduction in plate numbers, the interval between cleaning times was extended from two to eight months. In addition, it was noted that the scale build-up on the plates was much softer and easily removed with high pressure water jetting, saving the need for mechanical descaling.

Such has been the success of the trial that the cleaning operation can now be completed offshore. Acid back washing is no longer required and has been replaced with sea water. This has allowed Talisman to use cheaper nitrile gaskets, a cost saving of 66%, and for the plates to last longer.

*Scalewatcher*<sup>TM</sup> enclosure used for hazardous gaseous areas.



Enclosure type: Exx

This model is optional for all Industrial units up to 8"