

Odfjell

Installation of 4 Pronomar Merus Rings 8"
26 June 2012



Odfjell Terminal, Rotterdam

Evaluation 18.05.2011

The Odfjell Refinery in Rotterdam/Europort runs their cooling loops with surface water from the harbour. As a consequence there occur problems with scaling, normally being a mixture of mud, rust, bio-fouling and salty deposits. These problems get worse during the summer time when the harbour water gets warmed-up.

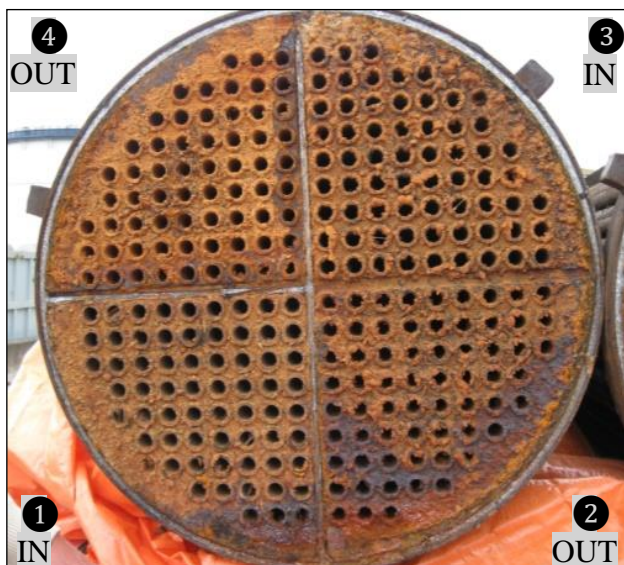
For this purpose the Merus technology was installed in one distil column in front of the HE 205-A. The HE 205-B of the same column is run without the Merus technology for comparison.



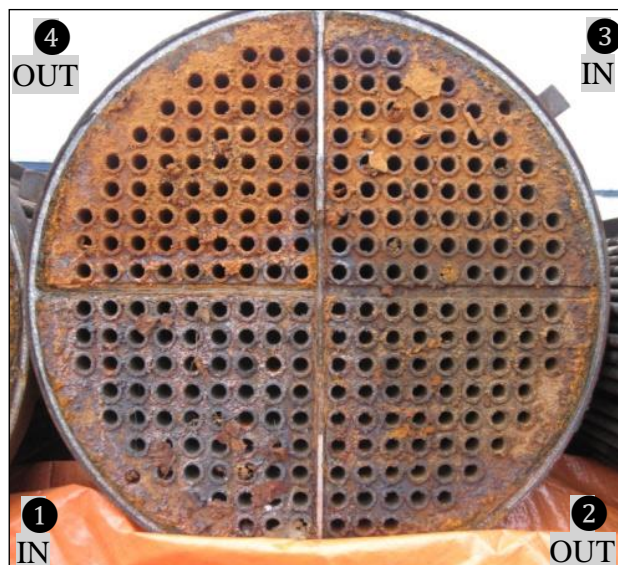
HE 205-A with Merus device 6" HCI Bio

- Installation of both HE in October 2010 (reconditioned)
- Annual cleaning is always carried out around May before the summer period with warmer water
- Pictures taken on May 18th 2011

HE 205-B = without Merus

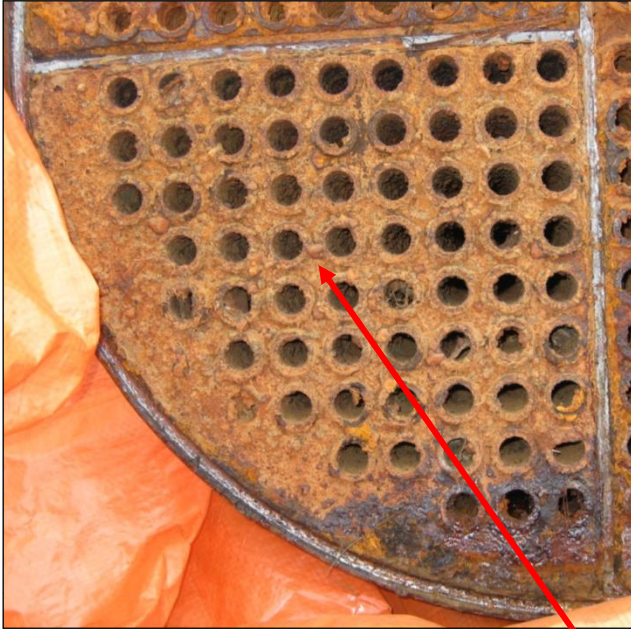


HE 205-A = with Merus

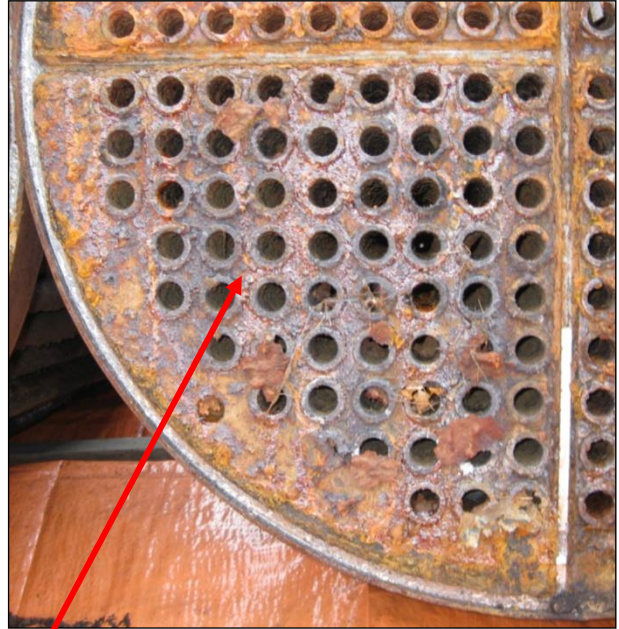


Section ① IN

HE 205-B = without Merus



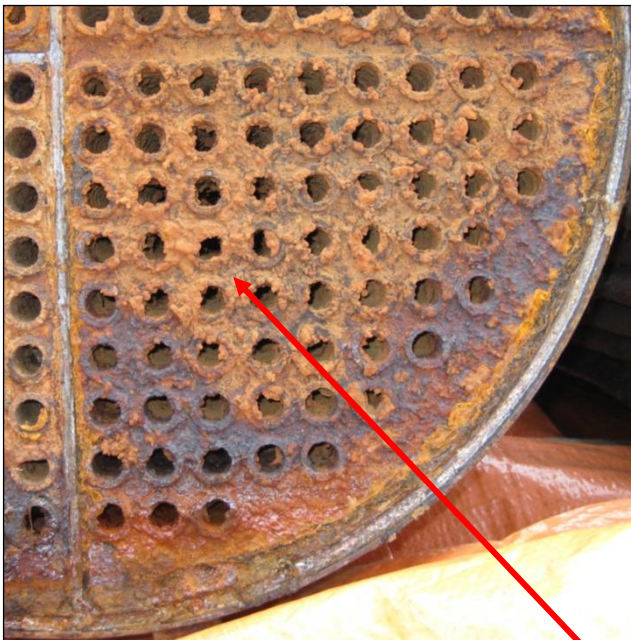
HE 205-A = with Merus



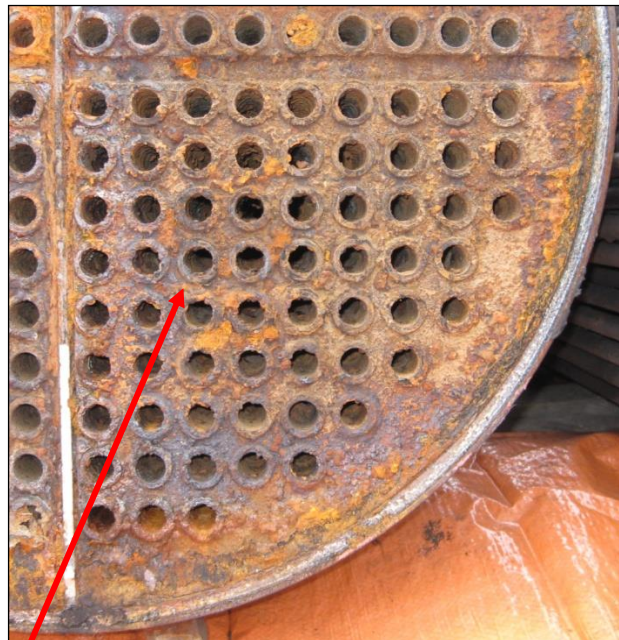
visible difference in scaling and amount of corrosion

Section ② OUT

HE 205-B = without Merus



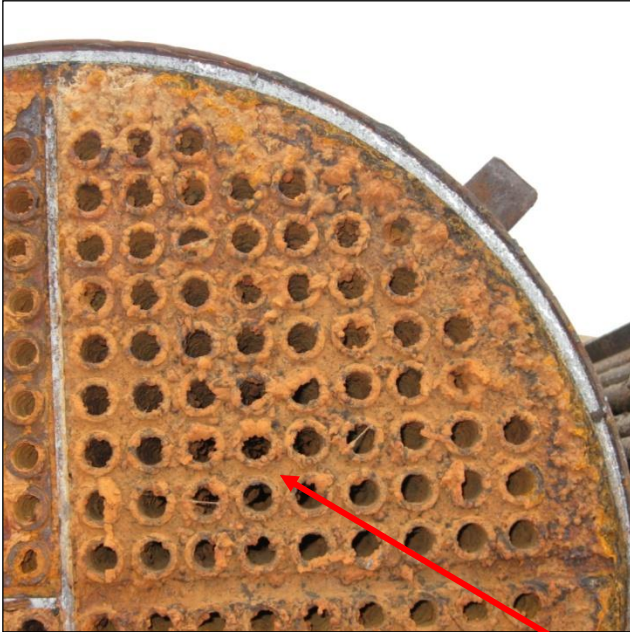
HE 205-A = with Merus



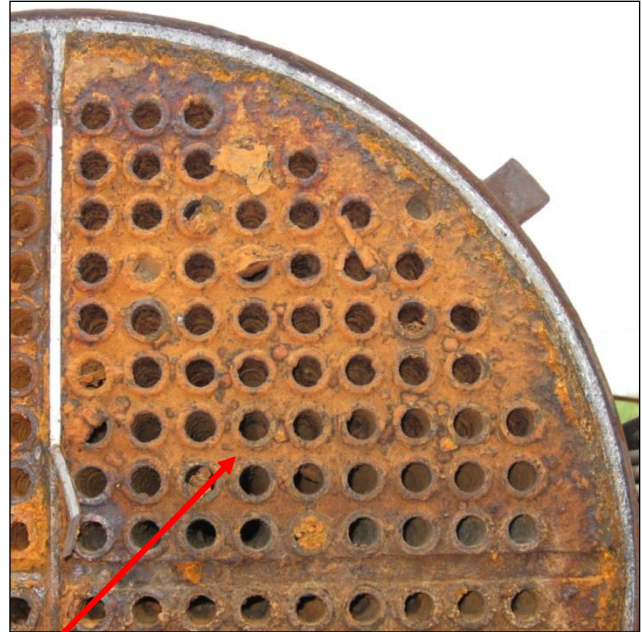
visible difference in scaling and amount of corrosion

Section 3 IN

HE 205-B = without Merus



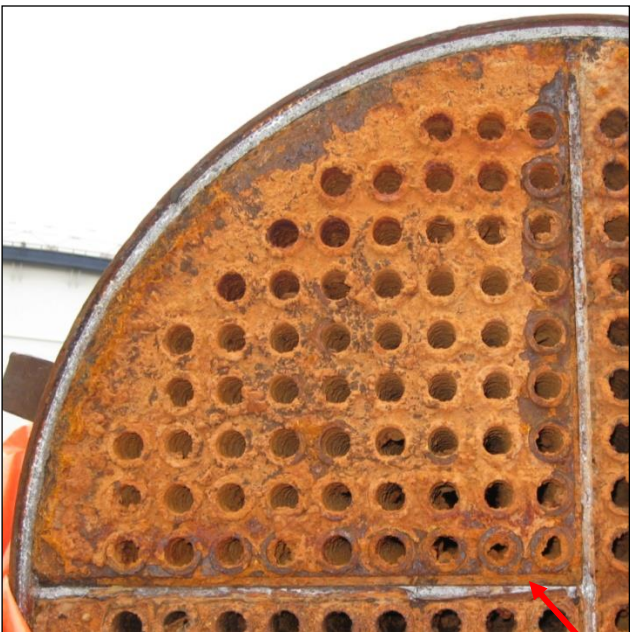
HE 205-A = with Merus



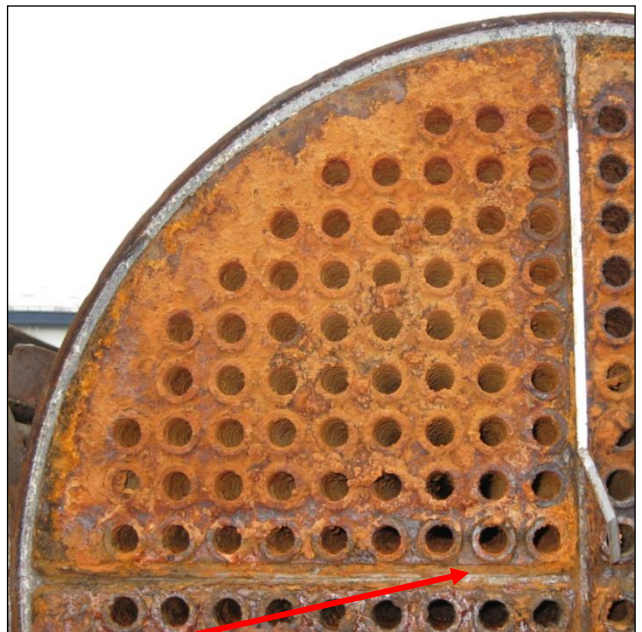
visible difference in scaling and amount of corrosion

Section 4 OUT

HE 205-B = without Merus



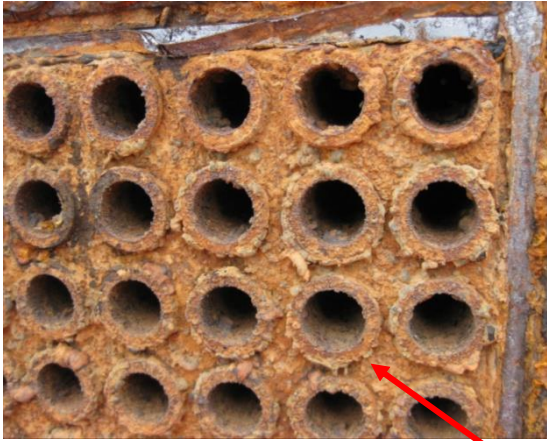
HE 205-A = with Merus



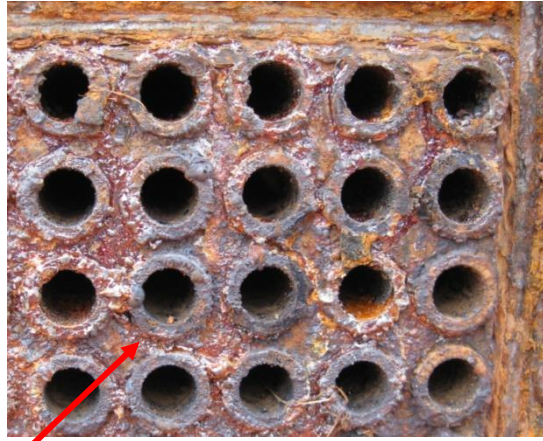
visible difference in scaling and amount of corrosion

Section 1 IN

HE 205-B = without Merus



HE 205-A = with Merus



On section 1 with the least deposits the effect of Merus on corrosion can be observed best: a black magnetite layer has formed on the mother material.

Conclusion

It can be noticed that **the Merus technology has a positive influence on the speed of scaling**. In other words, the scaling process is slowed down.

In the long run, this will result in longer maintenance intervals, better heat exchange for a longer period of time and less wearing of the heat exchanger material due to less corrosion (best to be seen in section 1 with the least deposits on the surface).

As already known and stated, the Merus technology does not affect scaling components as mud, earth or sand, etc., but only deposits resulting from limescale/salt, bio-fouling and rust.

For more case studies on the efficiency of the Merus technology please refer to:

www.merusononline.com

www.merusoilandgas.com (to access case studies get your account and password in a few simple steps)

or link through www.pronomar.com/merus/