

# CASE: Avoid Production Loss by Decontaminating Lube Oil Systems ONLINE

**A customer in Oman had through their in-house oil contamination monitoring program been observing starting oil degradation at the lube oil systems serving three of their compressor systems.**

In time oil degradation will result in, what people refer to as, insolubles in the oil, which is the initial stage of varnish formation. If this development is left unattended, the insolubles will react with solid wear particles in the system and generate varnish.

When varnish is being generated inside the system, it can cause interruptions of the production such as tripping system, production loss etc. From this point, it is very difficult to eliminate the varnish from the system.

## **Known actions toward varnish elimination**

A known method to eliminate varnish is to establish a kidney loop and hereby perform electrostatic filtration, electrophysical bonding or offline filtration of the infected system. Unfortunately, this method is limited by low flow conditions, which will not always be effective enough to eliminate the varnish at the same rate as it is generated in the system. In such cases, the normal procedure is to shut down the whole system and clean it manually in order to eliminate the varnish formation. Such a cleaning process will involve following steps:

1. Shutdown of the infected system.
2. Draining of the system for all infected oil.
3. Mechanical cleaning of the oil tank.
4. Filling and filtering of new oil to the system.
5. Conduction of a full system flushing.

All together this is a very expensive and timeconsuming procedure, which will result in huge production losses at the infected system.



## **Remove the catalysts**

Instead of waiting to take action until the varnish is causing problems in the system, Ocean Team focuses on eliminating the catalysts for varnish formation before it starts causing interruptions of the general production. On the basis of oil analyses we are able to monitor the chemical process, which leads to oil degradation. This gives us the possibility to take action at an earlier stage and eliminate the catalysts for varnish formation before the formation of varnish starts to escalate and cause interruptions.

By means of unique high flow online decontamination techniques we were able to clean the 12,000 litres lube oil systems for the customer in Oman without shutting down the compressors.

## **The benefits compared to the known methods**

The benefits by using Ocean Team's high flow online oil decontamination technologies compared to the common-known offline alternatives are:

- No production loss – the catalysts are eliminated without shutting down the system.
- Preventive method – the catalysts are removed before the varnish formation is causing interruptions of the production.
- Faster cleaning – we were able to bring down the contamination level with 5 ISO 4406 classes for each system within only one working day per system. This result has afterwards been verified by the customer by their own in-house laboratory.