

Cooling Water Circuit Hydrocarbon Leak Detection in Oil and Gas Industry



Cooling water system plays a very important role in rejecting heat from process streams and for many other utilities. Cooling water in oil & gas industry needs special attention since evaporation losses account for the bulk of water and energy losses in oil refineries. Therefore improved equipment efficiency, for additional process cooling is required and to improve light ends recovery. This leads to minimization of other miscellaneous losses and in addition, various pollution regulations and industry-specific publications define discharge parameters such as pH, TDS, TSS and TOC content.

Forbes Marshall provides solutions for cooling water quality monitoring and HC leak detection

Inductive Conductivity can be used for monitoring the concentration cycles

Alkalinity and Hardness, are monitored in the biggest cooling towers for evaluating the calcium carbonate precipitation risk

pH measurement must be less than the critical pH (8.3) where the calcium carbonate begins to precipitate

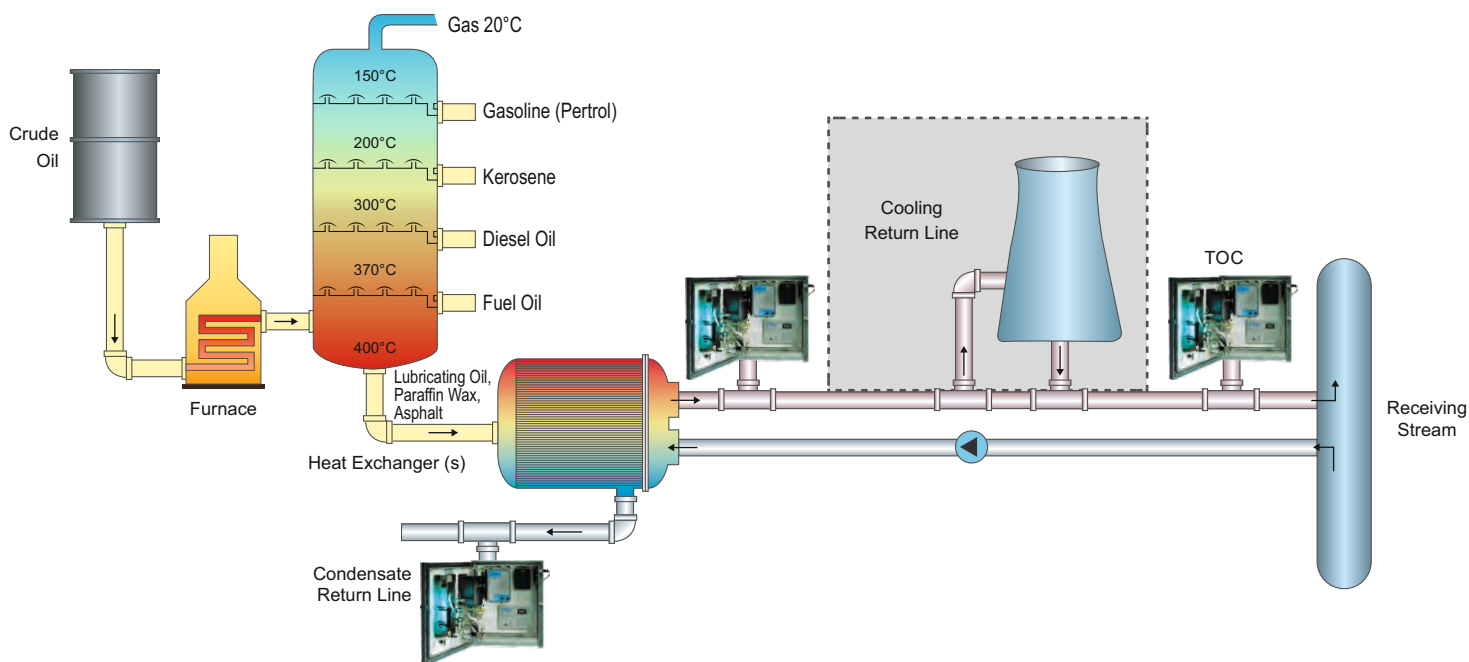
Chlorine, Ozone, Redox can be monitored at the raw water inlet point where oxidant (chlorine, bromine) are added for killing micro-organism

Total Organic Carbon Cooling water in leakage due to stress corrosion causes cracking of tubes: And mainly in oil and gas industry inline leakages can introduce hydrocarbons in the cooling water. Therefore an online measurement of hydrocarbon (HC) or TOC (Total Organic Carbon) or TC (Total Carbon) is a must in any oil and gas industry. Forbes Marshall provides these solutions to monitor either HC or TOC/TC/Oil on a truly online (real time) basis.



Compact design for easy and field mounting installation

Reticulate Cooling System with Online TOC Monitoring



Salient Features of TOC Analyser

Continuous monitoring and truly online response

Fast and reliable measurement of organic leakages in cooling water

Auto cleaning and auto calibration facility. Thereby reducing manual intervention.

Self-cleaning facilities helps to reduce down time of such critical measurements

UV oxidation works at lower temperatures, and does not need any combustion chambers or heating equipment. Thereby reducing maintenance.

TOC analysis for instance should be monitored at each of the different production areas along with flow meters, this allows them firstly to try and minimize the amount of product loss and secondly they can charge each of the production are as a proportional amount of the effluent costs relative to what they have discharged.

The Forbes Marshall FMTOC 101 therefore provides results with response time of 6 minutes and a repeatability of 1-2%, and has wide operating ranges from trace levels (10~20 ppm) to as high as 5000 ppm. It provides highly reliable, fast and accurate means of determine, in real time, organic contamination and leakage detection.



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