



BAZAN 112
OIL REFINERIES LTD

RE: CQM Automatic Tube Cleaning System in Ashdod Refinery, Israel.

On August 2003 CQM has installed its system in our Amine generator plant, in the H₂S condenser tube and shell Heat exchanger.

Prior to the installation the heat exchanger was constantly clogged by scale and mud, causing us the following problems:

1. Cleaning 1-2 times per year (half - full day per cleaning session)
2. Lost of capacity due to process problem in the Sulfur recovery plant.
This plant is installed after the Amine Unit. When the H₂S condenser was tend to clogged, which cause some operational difficulties in the Sulfur recovery plant. That has cause more clogging by corrosion particles and discontinuation of the process. Disruption of the Sulfur retrieval Plant costs thousands of US \$ per day. This cost is amplified when the crude oil is of high sulfur content.
3. Water consumption – before the installation we used to constantly spray water on the heat exchanger in order to cool it down.
4. Maintenance and managerial attention to the system which was a bottle neck at the time.

Since the installation of CQM technology, our production is running smoothly with no interruptions, we do not need stop the heat exchanger for maintenance, and no more malfunctions were registered in the Sulfur Recovery plant.

A study that was conducted by our external engineering company to evaluate the benefits of CQM'S technology shows direct cost savings of more then \$50,000 per year / per heat exchanger and in addition shows improvement of 157% in heat transfer.

Following the above results and full satisfaction from CQM's technical ability and customer service, we plan to continue and install these systems throughout our plant.

Regards

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Refinery Manager

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