

ChemTreat Improves Operation of Oil Refinery's Flare Gas Recovery Unit (FGRU)

Background

In recent years, flaring within refineries has become an environmental and economic concern. The waste gas sent to flare units has a high heat value, and an abundance of environmental contaminants. Flare Gas Recovery Units (FGRUs) are an increasingly common tool to address this issue. FGRUs limit the amount of waste gas sent to the flare, enabling refineries to treat and recover high-value fuel gas.

The re-pressurization of flare gas ensures the majority of the gases are recycled to the sour fuel gas system within the plant instead of the surrounding environment. This gas/liquid mixture circulating within the FGRU poses a unique challenge for water treatment, as corrosion rates are very high because of the presence of acidic gases.

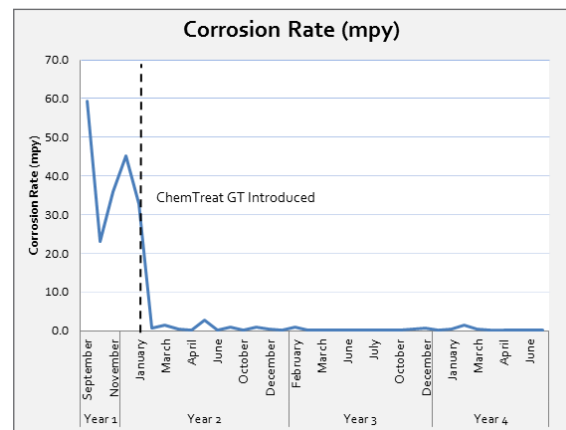


Emerging environmental regulations have prompted the need for new treatment technologies in the refining industry. ChemTreat was able to deliver a comprehensive treatment program capable of protecting FGRUs from corrosion with its GT product line. Refining companies can now reduce environmental contaminants and energy waste with confidence.

Problem/Solution

A large Midwestern oil refinery was plagued with FGRU corrosion. In the service liquid loop, fin fan coolers and lines experienced corrosion rates as high as 59 mpy. In addition, high turbidity levels of sour water blowdown contributed to equipment downtime related to deposition. ChemTreat recommended its Gas Treatment (GT) product line specifically designed for use in refineries and sour gas industries to protect the integrity of the refinery's FGRU.

Figure 1: Corrosion data before and after the introduction of ChemTreat GT



Results

After the introduction of ChemTreat GT, FGRU corrosion decreased drastically to an average of 0.45 mpy, as demonstrated in Figure 1. Additionally, water clarity in the sour water blowdown significantly improved, reducing the risk of deposition onto the FGRU. Since ChemTreat GT reduced corrosion and deposition, the FGRU has continuously operated exceptionally well.

