Question 58: Some crudes contain fine particles which result in poor desalting and/or high sludge generation. How are you managing this? Are there specific strategies for treating desalter brine separately (ahead of the wastewater plant)?

George Duggan (Baker Hughes)

Along the lines of Ron's last point on secondary treatment of brine, some refineries have installed diversion tanks to receive the effluent water when the mud wash is being used. Other refineries have installed various designs of break tanks in the run down from the desalter effluent to try to break out as much oil and solids before the water reaches the WWTP (waste water treatment plant). Much depends on how the refinery waste water system is configured. We have had success chemically treating the desalter brine as a dedicated stream, breaking emulsions, while allowing for the removal of both the insoluble particulate and dispersed oil prior to entering the WWTP. One important point is to isolate the solids such that they are not returned to the crude unit via slops.

Tom Collins (Forum Energy Technologies)

(a) Laboratory testing should be performed on the crude to measure filterable solid size distribution and type. Filters should range from 0.45 micron down to 0.1 micron, and should be used on both the raw crude and the interface emulsion. Once data has been generated, then a operating program can be considered to best deal with your particular situation.

(b) Some refiners have used secondary treatment equipment ranging from centrifuge type applications, to simple break tanks where additional chemicals may be employed for further separation. Typically the oil recovered from equipment using water clarification type chemistry is not a good candidate to be reprocessed in the desalter.

Tags

Crudes

Desalting

Process

Slurry

Tankage

Year

2011