

Oil and Gas: Application Focus

Pall rental skids ensure demand for high quality jet fuel is achieved

A Middle East Oil & Gas company operates a tank farm that supplies jet fuel for one of the most important international airports in the country.

Problem

Over several years, the tank farm had been receiving contaminated jet fuel (containing solids and free water), hence the fuel required a long period of settling (varies between 2 days to 1 week of settling) and further filtration before it could be dispatched to the end user. This created a challenge when supply demand was high and incurred additional costs involving tankering offsite for processing to meet the required fuel cleanliness specification.

Pall solution

After an initial fuel sample analysis Pall proposed that two mobile particulate filtration skids and two mobile coalescer skids be installed to achieve the required level of solids and water removal, in the main line upstream of the settling tanks, to depollute the jet fuel received at the tanks.

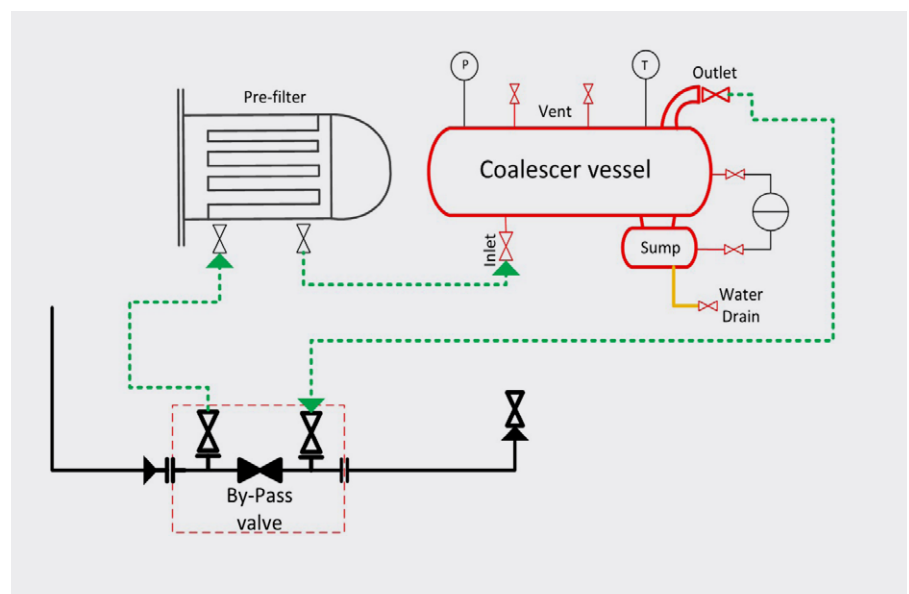
The objective was to reduce the solid contamination level (Total Suspended Solids content or TSS) to below 1 mg/L and to remove all free water content in a single pass via a single filtration stage housed within a compact footprint suitable for the limited space available onsite.

Operating conditions throughout the depollution process were:

- Flow: 120 MBD
- Fuel Temperature: 20~45 °C (68~113 °F)
- Change over DP: 45 psi g (3.1 bar g)
- Upstream pressure: 5~70 psi g (0.34~4.83 bar g)



One of two Pall Ultipleat High Flow solid particulate skids



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The filter skids equipped with 2 micron “absolute” rated Pall Ultipleat® High Flow filter cartridges, (the performance of which is validated and reproducible), were delivered, installed and deployed quickly and directly from Pall’s extensive in-region rental fleet.

Operating feedback

Depollution of the Jet fuel was successfully achieved in a single pass of the 2 micron “absolute” rated particulate filters and Aquasep® XS liquid/liquid coalescer cartridges. Unlike conventional glass fiber coalescer filter elements, the polymeric media used in Pall Aquasep XS coalescers effectively prevents disarming (i.e. inability to coalesce and separate water), ensuring long service life and delivering consistently ‘clear and bright’ jet fuel downstream.



Jet fuel
Upstream of filtration

Jet fuel
Downstream of filtration

Subsequent analysis results confirmed the downstream solids contamination levels were significantly below the maximum permissible limits (upstream average TSS : 6mg/L , downstream TSS <1) and that the fuel was free of water, meaning it was ready to be dispatched to the end user without settling or offsite processing.



Based on the results, the plant was delighted with the Pall depollution solution, and retained the mobile rental filter skid in operation until a permanent absolute filtration system was purchased and installed.

Conclusion

The Pall mobile filter skid equipped with absolute rated high flow filter cartridges is a reliable and cost-effective solution to help maintain continuous supply of clean fuels to end users regardless of the contamination levels accumulated from transportation in pipelines or any other contamination source.



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