

Crude Oil Stream Black Powder Removal

Diesel Fuel Suction Pump Protection

Process Compliance Products Inc, Houston, 2015



2 Day Run Time



2 Week Run Time

Problem:

Petromax Refining Company identified a Black Powder contamination issue in their incoming crude stream. This contamination plates out on walls, trays and piping in the column when there is temperature and pressure variance. Large scale plugging occurred in the plant interrupting production on a wide spread scale. The problem became increasingly detrimental after lightning struck the plant; lines plugged immediately after the plant resumed production. Traditional filtration was not effective as the cone strainers protecting pumps in the facility clogged too quickly to provide adequate filtration.

Solution:

Place a BPS Magnetic Separator suction side to protect the diesel fuel pumps.

Results:

The Black Powder Magnetic Separator did not plug or restrict flow. The Magnetic Separator cleaned the stream stopping Black Powder from clogging the cone strainers and from getting to the final clean product filter. Research into the composition of the Black Powder found showed a consistently high particle size of 5.5 microns. Sampling since the installation of the BPS Magnetic Separator along with a new coalescer shows an improvement of 80% in total particle count and a drop in mean particle size to 1.4 microns. The particles removed are mainly Iron Sulfide, the total sulfur content of the diesel stream is much cleaner than

Conclusion:

The BPS Magnetic Separation System is a part of the overall goal of the plant to produce the cleanest product with the most reliable equipment on the ship channel in Houston TX. They are currently underway with a project that will have a suction side Magnetic Separator on every pump to accomplish the levels of cleanliness that conventional filters cannot. Installing Magnetic Separator on most pumps in the crude unit removes the source of problems within the facility before it reaches flush coolers and seal faces.