

Diesel Fuel Cracking Column

2015 - 2021: 6+ years of operation reducing ESG Risk and OPEX

Petromax Gulf Coast Refinery, Houston, TX USA

“Magnetic filtration has been a quick, simple and inexpensive way to dramatically improve our product quality and unit reliability. Black Powder Magnetic Separators are our first choice now in applications we never would have considered in the past.”

- Matthew Caster, chief engineer for Petromax

Problems

1. Black Powder contamination larger than 30 microns in size causing cavitation and pump failure.
2. Black Powder contamination under 10 microns down to and below 1 micron flow through the strainer, damaging equipment components downstream and degrade product quality.
3. Unscheduled maintenance for pump replacement. The repairs require switching to standby pumps, while the pump and pipe is removed to access cone strainers for cleaning. Often, the line leading to the strainer would also plug off. The line would require manual cleaning to the back of the valve.

Solution

Replace the standard cone strainer with a Black Powder Solutions Magnetic Separator (Figure 1) capable of cleaning Black Powder contamination (Figure 2) from 100+ to below 1 microns upstream of the product pump.

Result

- Post pump traditional filter consumption reduced by 15 sets, at an annual savings of \$81,000 USD.
- Operating with minimal flow restriction reducing pump stress and cavitation.
- Cleaning contamination down to and below 1 micron, allowing the fuel to be sold at a premium.
- Reduced unscheduled maintenance and extended maintenance intervals.
- Increased holding capacity by 10+ times compared to the traditional cone strainers.

ANNUAL COST SAVINGS

\$81,000 USD



Figure 1. Black Powder Solutions Magnetic Separator installed upstream of the pump



Figure 2. Black Powder collected on the Magnetic Separator element