

LPG Cracker Column Test

LPG Refinery Cracker Column Test Petromax Refining Company, Texas, 2015

Problem:

Petromax Refining Company is a new refinery in Houston experiencing high levels of Black Powder in all its process steams. The LPG product coming from cracker column was identified as a test project with high levels of Black Powder contamination lowering the quality resulting in lower value. Traditional filtration technology is unable to remove Black Powder to submicron level passing through each refining process, therefore it damages components and lowers LPG product quality.

Test:

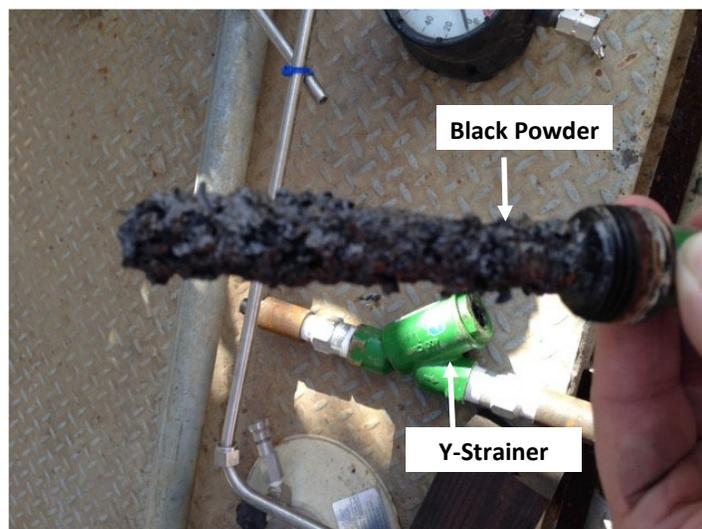
A sample slip stream was used to test the capability of BPS Magnetic Separators upstream from the cracking tower in the refinery. The LPG was pre-filtered with traditional filtration before entering the slip stream.

BPS Magnetic Separator	1"OD x 3 1/2" LMagnetic Y-Separator
Slip Stream Size	1/2" Sample Slip Stream
Slip Stream Flow Rate	5GPH
Temperature	145 F
Time Period	14 Days

Results:

BP Collected	18g
Sample Size	9.58g
Particulate Size	1-100 Microns
Particulate Composition	50.5% Iron 23% Iron Sulphate 21.5% Sulfur 5% Magnesium, Calcium, Silica, trace of Aluminum

The test is a success in proving the efficiency of BPS Magnetic Separators removing ferrous and non-ferrous contamination to sub-micron levels to below 1 micron with no flow restriction.



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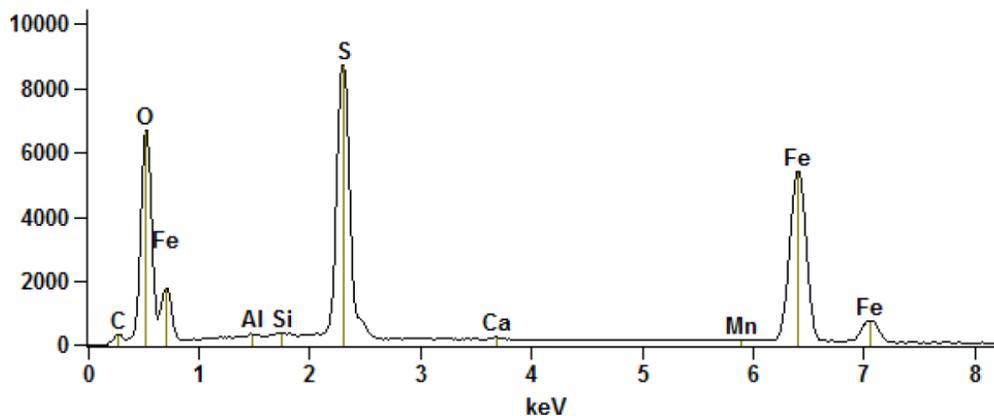
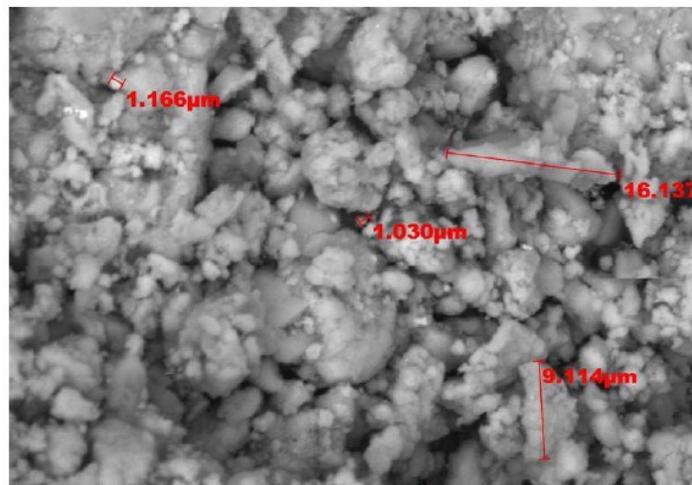


Recommendation:

Conduct a control test of the main LPG stream by installing a BPS Separator designed for the flow volumes. Once completed, and representative of the slip stream test, install BPS Separators on the inlet line into the refinery to capture the main source of the BP. Install Magnetic Separators on all process lines before the pumps and on the flush lines for each pump to protect the mechanical seals.

Conclusion:

The engineering team at the Petromax Refinery is conducting additional testing with the goal of installing BPS technology on the inlet pipeline to the refinery and on all key process locations including process water. This will significantly reduce the damage to the pumps, meters and process equipment and the finished products will be graded at a higher value. Mathew Caster, the senior production engineer states, "This low maintenance technology is easy to use and very valuable to us, it accomplished everything we wanted it to".



Weight %	C-K	O-K	Al-K	Si-K	S-K	Ca-K	Mn-K	Fe-K
WC5832(1)_pt1	3.11	23.82	0.10	0.15	21.67	0.17	0.49	50.50

Testing done by the independent lab:
Metro Tech Systems Ltd.
5621 11th Street SE
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