



Magnetic Filtration Testing



Manufacturer: One Eye Industries
Inc.

Date: 05 November 2007

1 – OBJECTIVE

To test the magnetic filter fabricated by One Eye Industries Inc., that will be installed in the 14” test loop.

2 – AIM

To evaluate the capability of the magnetic filter in capturing metallic particles existing inside the pipe line.

3 – PLAN

Beyond large amount of metallic particles inside of the existing pipe, additional corrosive particles were added approximately 1 kg of black dust.

4 – EXECUTION OF THE WORK

Date 30 Oct 2007

Installation of the magnetic filter (Photos B, C, D and E) in the 14” loop between second-last and last section of the 14” loop, according to Photo A.



Photo A – 14” Loop red arrow indicating location of the Magnetic Filter



Photo B – Magnetic Filter



Photo C – Location of the Magnetic Filter (30 Oct 2007)



Photo D - Magnetic Filter (30 Oct 2007)



Photo E - Magnetic Filter inside 14" loop (30 Oct 2007)

5 Nov 2007

From 8:30 to 8:35 am filling the loop with water

From 10:50 am to 7:00pm pumping water through the loop at 120 m³/h rate

6 Nov 2007

9:00 am to 12 noon removing water from loop to the water tank.

The Magnetic Filter was retrieved (Photo F) at 1:00 pm this day, and we evaluated the material deposited on the Magnetic Filter (Photo G and H), then re-installed the filter into the loop (Photo I).



Photo F – Retrieval of Magnetic Filter
(6 Nov 2007)



Photo G – Metallic impurities captured
by Magnetic Filter



Photo H – Metallic Impurities 6 Nov 2007



Photo I – Installation of the Magnetic Filter
(6 Nov 2007)

Day 7 Nov 2007

From 11:00 am to 8:30 pm pumping water through the loop at 120m³/h rate. During this time we injected into the loop approximately 1kg of black powder (ferrous oxide) furnished by client from the cleaning of Brazil/Bolivia (GASBOL) gas pipeline by a pig.

Date 8 Nov 2007

From 8:30 am to 10:30 am withdrew water from loop into the water tank. At 10:40 am in the presence of the client and invites, we retrieved the Magnetic Filter from the 14" loop (Photos J, K, and L)

Photo J – Retrieving the Magnetic Filter (8 NOV 2007)

Photo K – Metallic impurities captured by the Magnetic Filter (8 Nov 2007)

Photo L – Metallic impurities captured by Magnetic Filter



Photo J – Retrieving the filter (8 Nov 2007)



Photo K – Metallic impurities (8 Nov 2007)

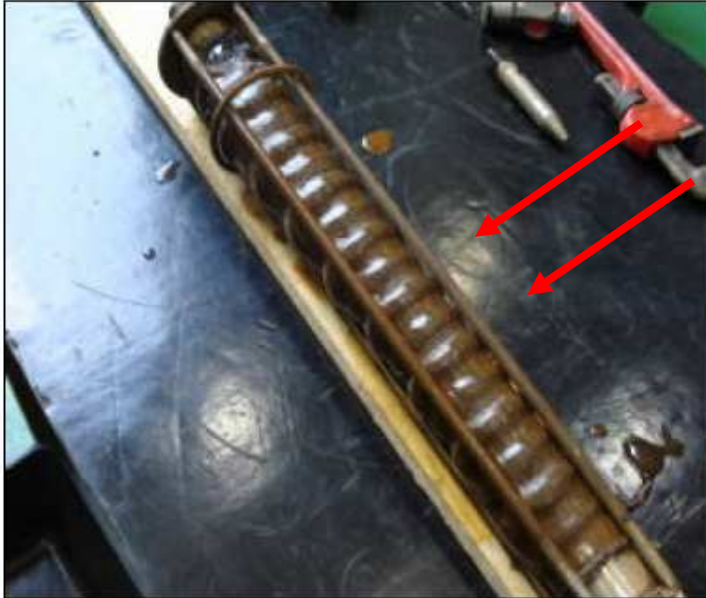


Photo L – Metallic impurities

At 11:30 am we evaluated the amount captured on the Magnetic Filter (Photo M)



Photo M – Metallic impurities captured by Magnetic Filter

5. Conclusion

The test demonstrated a good capability of the Magnetic Filter to retain ferrous oxide particles that pass through the pipe.

Depending on the velocity of the flow and size of the particles, it could be advisable to utilize turbulence baffles to dislodge large metallic particles along the bottom surface of the pipe.

This turbulence could be caused by the three cross-members of the magnetic element in the longitudinally-inclined position. (Verbal comment: If the cross-members were shaped like propeller blades, it would increase the turbulence and likelihood of attracting the loose metal.)

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