

Permit: KP3734SH

Vopak Terminal Windmill Ltd

Annual Review of Fugitive Emission Testing.

Date: May 12th 2014

Objective

To review the fugitive emission testing at the Windmill Site, having regard to the application of Best Available Techniques. Permit Condition 4.1.4

Scope

All equipment utilised in the storage and handling of methanol on the Vopak Site, inclusive but not limited to: tank vents, pipelines, pumps, filters, flanges, seals and glands.

Exceptions

The ship unloading system is only full during ship off loading operations (less than 7%) and as such does not form part of every quarterly programmed fugitive test. Visual checks on the shipping pipelines and fitments are carried out at the commencement of every shipping operation and logged.

Test Methods Adopted

US EPA "Method 21" using a flame ionisation detector (Foxboro TVA 1000B)

Monitoring

Our previous good experience with **LDAR ENVOLVE** was a major contributing factor for the decision to continue to use them for the quarterly testing of the methanol systems during 2013.

Equipment and procedures utilised remained the same, giving the consistent approach that enabled us to make a good comparison with the results from previous years.

During the year no major issues were encountered, readings fluctuate due to system usage, tank levels and weather conditions but very few were recorded above *500ppm, which is our self-imposed action threshold. The reason for these higher readings was investigated and bolts tightened, glands pulled up, plugs re-jointed etc. as necessary. Readings from the glands of the actuated valves, pumps and tank inner floating roof seals have shown no appreciable increase, and continue to provide good service

From all measured points a calculation is made to determine a total release if that individual reading was to be present at the measured rate for the 12 month period. The four quarterly calculated release totals are then averaged at the end of the year to determine the annual release. This provides a more realistic annual total considering the different climatic conditions during the year. For 2013 the calculated figure was 125 kgs.

Conclusions

In our opinion the testing method employed still remains the best approach to provide periodic monitoring throughout the year and the means of calculating a realistic annual release total for the entire methanol system.

From this conclusion it is proposed to continue with the LDAR testing into 2014.

*Note

At 500 ppm there are no visible signs of leakage.

Author: D G Pratt