

# **RECOVERY OF PETROL VAPOUR AT A BULK STORAGE FACILITY**

I, CORNELIA VENTER, hereby declare that the work as contained in this document was compiled and set out by myself and it has not been submitted to any other university.

By

SIGNED ON THE 21<sup>st</sup> **CORNELIA VENTER** 2003

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## DECLARATION BY STUDENT

I, CORNELIA VENTER, hereby declare that the work as contained in this document was compiled and set out by myself and it has not been submitted to any other university.

SIGNED ON THE 24<sup>th</sup> DAY OF NOVEMBER 2003.

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## SYNOPSIS

VOC emissions are emitted during the various storage and distribution stages of petrol. These emissions contribute to the formation of smog and the control of these emissions has been applied internationally for some years. Vapour recovery is the preferred control technology after prevention and minimization. The application of vapour recovery of petrol in South Africa has been limited and the first vapour recovery unit in the country was installed at the Engen-Woodstock storage and loading facility in 2001. Petrol loading data and vapour analyser data were used to determine the theoretical and experimental filling emissions from the Engen bulk storage facility. The average filling emission at the Engen facility was 0,06% compared to a value of 0,05% in Europe. It is recommended that further research be conducted to determine the vapour collection efficiency at the Engen facility, and to assess VOC emissions from the other stages of the overall petrol storage and distribution system.

**KEYWORDS:** volatile organic compounds, carbon vacuum adsorption process, petrol, vapour, vapour recovery systems, bulk storage facility

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### RECOVERY OF PETROL AT A BULK STORAGE FACILITY

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**Degree:** MEng (Environmental Engineering)

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**KEYWORDS:** volatile organic compounds, carbon vacuum adsorption process, petrol, vapour, vapour recovery systems, bulk storage facility

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## ABBREVIATIONS

<b>BAT</b>	Best Available Technology/Technique
<b>CAA</b>	Clean Air Act
<b>CAPCO</b>	Chief Air Pollution Control Officer
<b>CFR</b>	Code of Federal Regulations
<b>CVA</b>	Carbon Vacuum Adsorption
<b>EMCAs</b>	Environmental Management Co-operation Agreements
<b>EPA</b>	Environmental Protection Agency
<b>EU</b>	European Union
<b>GLO</b>	Groundlevel Ozone
<b>GNAs</b>	Good Neighbour Agreements
<b>IPPC</b>	Integrated Pollution Prevention and Control
<b>NAAQSs</b>	National Ambient Air Quality Standards
<b>ORVR</b>	Onboard Refuelling Vapour Recovery
<b>PLV</b>	Preloading Vapour
<b>POCP</b>	Photochemical Ozone Creation Potential
<b>RVP</b>	Reid Vapour Pressure
<b>TOMA</b>	Tropospheric Ozone Management Area
<b>VOC/s</b>	Volatile Organic Compound/s
<b>VRU</b>	Vapour Recovery Unit
<b>UNECE</b>	United Nations Economic Commission for Europe