



**ENVIRONMENTAL CONSULTING**

**PROPOSED EXPANSION OF FUEL STORAGE CAPACITY BY 90  
CUBIC METRES FROM 79 TO 169 CUBIC METERS BY  
INSTALLING TWO 45 CUBIC METERS UNDERGROUND STORAGE  
TANKS (USTs) ON ERF 23311, BRACKENFELL, CITY OF CAPE  
TOWN METROPOLITAN**

**DUST MANAGEMENT PLAN**

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## EXECUTIVE SUMMARY

The applicant, BUFFDAXCO 3 (Pty) Limited, proposes to increase the fuel storage capacity from 79m<sup>3</sup> to 169m<sup>3</sup> (and install associated infrastructure), on Erf 23311, Brackenfell. Two 45 m<sup>3</sup> USTs are proposed to be installed. The site is approximately 3 429m<sup>2</sup> in extent and is situated within Ward 8 of the City of Cape Town Metropolitan at the following co-ordinates: 33°54'30.63"S; 18°40'29.19"E. The applicant proposes to expand the existing fuel storage capacity by an additional 90m<sup>3</sup>. The proposed expansion of fuel storage capacity at an existing fuel service station (to supply the increasing demand) will reduce the environmental and socio-economic impacts associated with the development of a new site for the same fuel storage capacity to service the growing demand for fuel in this area.

- Two 45 m<sup>3</sup> underground storage tanks (USTs) with a total storage capacity of 90m<sup>3</sup> and associated infrastructure.

### Alternatives Investigations:

Based on the nature of this proposal (i.e. the expansion of a fuel service station), no alternative site was considered as the proposed site for fuel storage expansion already exists. Development of additional storage capacity at a new fuel service station at an alternative, virgin site will have greater biological and hydrogeochemical impacts compared with the expansion of the existing capacity. The site is located within an area which would maximize service to the local community, therefore, due to the highly disturbed/transformed condition of the site, it is envisaged that the proposed expansion will have a low-to-insignificant impact on environmental features. However, should an alternative virgin site be developed, the proposed activity will increase the impact on the environment, compromising sustainable development. Layout and design alternatives were investigated; however, the preferred alternative was selected based on financial (e.g. optimizing the amount of infrastructure to connect to existing infrastructure) and space restrictions on site.

### Identification & Assessment of Impacts:

This proposal is for the expansion of fuel storage capacity from 79m<sup>3</sup> (existing) to 169m<sup>3</sup> (and associated infrastructure). The potentially significant impacts identified as being associated with the depot are as follows:

- 1. Soil & Groundwater Contamination & Pollution:** Fuel, oil, lubricants, and other pollutants may leak from vehicles/ machinery and contaminate the soil. Pollution and soil contamination could also occur from chemical toilets, cement mixing directly on the soil and

stormwater runoff may flow over the site camp area and carry contaminants off-site. A geohydrological assessment of the site showed the average static groundwater depth of a shallow, unconfined perched water table to be 2.88 m below ground level with the groundwater flow being in a west-south- westerly direction. There are no groundwater users within a 1 km radius of the site. A fractured aquifer of moderate vulnerability and a medium susceptibility rating occurs in the vicinity, with borehole yields typically ranging from 0.5 – 2.0 l/s. Groundwater quality is moderate to poor while detectable hydrocarbon (only toluene, of unknown source) were not of concern (Appendix G2). The impact on groundwater quality will be low provided that the mitigation measures in tank design, installation and groundwater monitoring are implemented.

**2. Fire, Health & Safety Risk:** Exposure through breathing vapours, swallowing hazardous substances or skin contact may have possible health effects. There is a minor risk of a hydrocarbon pool fire and toxic combustion gases if an incident occurs at the existing facility while construction takes place for the upgrade.

**3. Freshwater:**

As per the specialist study, no watercourses are located within 32m of the property boundary of the proposed site for the expansion of the fuel storage capacity. A seep wetland is located approximately 77m north of the site, and a floodplain wetland is located 72.7m west (it must be noted that this wetland has been previously transformed). The wetland located to the north has been previously transformed by the construction of the Kuils River Road offramp and stormwater infrastructure whereby stormwater is directed to attenuation ponds. The Kuils River is located some 240m to the west and there is another wetland are lying further to the northwest of the project area. The project area drains south into a stormwater management system that flows west into the Kuils River. It is the freshwater specialist's opinion, supported by survey findings (Section 4.3), that the project area is of low sensitivity in terms of freshwater features. However, the sensitivity of the downstream receiving Kuils River system remains Very High. According to the NBA (2018) dataset the Threat status of the Kuils River associated within the downstream catchment of the proposed project is rated as Critically Endangered and Not Protected. The ecological sensitivity and importance in this catchment are rated Low and Moderate respectively, however, construction- related activities may negatively impact these watercourses.

A Water Use License Application or General Authorisation in terms of the National Water Act will be submitted as part of this application.

As existing fuel storage facilities and a service station are currently in place, the expansion of fuel storage capacity should not pose a risk to the Kuils River. It is the opinion of the freshwater specialist that there are no fatal flaws related to aquatic sensitivity for the proposed activities. Provided that all project-related aspects are restricted to the demarcated area and that mitigation measures are in place to ensure that no runoff of hydrocarbons occurs into the natural environment and the Kuils River, the proposed installation of additional fuel storage capacity will have a “Low” impact on the Aquatic Biodiversity Theme for the proposed Brackenfell fuel storage capacity expansion.

**4. Dust & Noise Impacts:** As a result of the construction phase of this development noise and dust impacts are expected to occur in the area due to an increase in construction vehicles and road tankers for the duration of the construction phase while materials are being transported to the site and excavations are being made.

**5. Traffic, Safety and Access Impacts:** As a result of the construction phase of this development traffic impacts are expected to occur in the area due to an increase in construction vehicle and truck traffic in the area for the duration of the construction phase while materials are being transported to the site. Road safety impacts and road condition impacts could also occur.

**6. Visual Impacts:** The construction phase is associated with temporary disturbance as a result of construction (trench excavations, vehicles, machinery, fencing & signage) that may have a negative visual impact on the public.

**7. Socio-economic – Creation of employment opportunities:** Temporary employment opportunities will be provided during the construction phase to those residing in the geographical area. This will be a positive, socio-economic impact.

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# 1 INTRODUCTION

The applicant, BUFFDAXCO 3 (Pty) Limited, proposes to increase the fuel storage capacity from 79m<sup>3</sup> to 169m<sup>3</sup> (and install associated infrastructure), on Erf 23311, Brackenfell. Two 45 m<sup>3</sup> USTs are proposed to be installed. The site is approximately 3 429m<sup>2</sup> in extent and is situated within Ward 8 of the City of Cape Town Metropolitan at the following co-ordinates: 33°54'30.63"S; 18°40'29.19"E. The applicant proposes to expand the existing fuel storage capacity by an additional 90m<sup>3</sup>. The existing fuel storage comprises of four underground storage tanks (USTs). The proposed expansion of fuel storage capacity at an existing fuel service station (to supply the increasing demand) will reduce the environmental and socio-economic impacts associated with the development of a new site for the same fuel storage capacity to service the growing demand for fuel in this area.

The application for Environmental Authorization is made to the Competent Authority, namely the Provincial Department of Environmental Affairs and Development Planning ("DEA&DP") and is required as the proposed development triggers an activity which is listed in terms of the National Environmental Management Act ("NEMA") Environmental Impact Assessment ("EIA") Regulations, 2014.

As part of required public participation of the EIA process, the applicant received comment from the DEA&DP with the request to submit a dust management plan.

The Dust Management Plan includes:

- Identification of possible sources of dust from the site during construction and operational phase
- Recommended measures to mitigate dust emissions
- Implementation schedule of mitigation measures
- Name of person responsible for implementation of measures
- Complaints register regarding dust fall

# 2 SCOPE OF WORK

The scope of the work of this report includes the following:

- Compile a Dust Management Plan for the Brackenfell R300 Fuel Service Station development in terms of the requirement of the City's Air Quality Management Unit in terms Section 26 of the City of Cape Town Air Quality Management By-law (August

2016) and Section 6 (2) of the NEM: AQA National Dust Control Regulations Government Notice R.827 (November 2013).

- This includes discussions with the applicant as well as the professional team and the review of information received from the applicant and professional team.

### **3 LEGAL REQUIREMENTS**

This dust management plan is based on the requirements listed in the:

- NEM:AQA National Dust Control Regulations Government Notice R.827 (November 2013) Section 6 (2)
- City of Cape Town Air Quality Management By-law (2016) Section 26



## 4 SITE LAYOUT

The applicant, BUFFDAXCO 3 (Pty) Limited, proposes to increase the fuel storage capacity from 79m<sup>3</sup> to 169m<sup>3</sup> (and install associated infrastructure), on Erf 23311, Brackenfell. The site is approximately 3 429m<sup>2</sup> in extent and is situated within Ward 8 of the City of Cape Town Metropolitan at the following co-ordinates: 33°54'30.63"S; 18°40'29.19"E.

**Figure 1.** Location of proposed development. Source: CapeFarmMapper



### Property size(s) of all proposed cadastral:

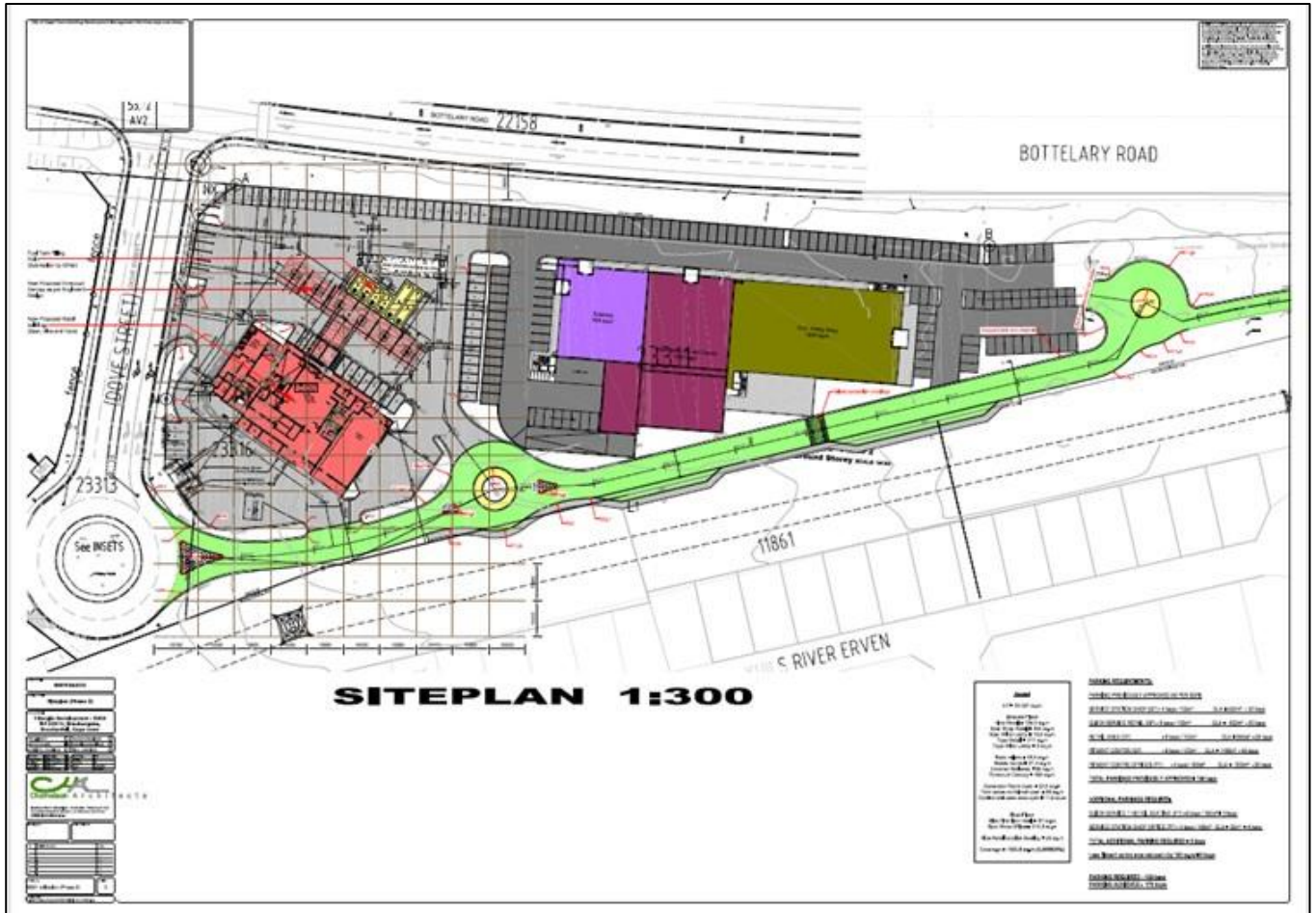
Erf 23311: Approximately 25 567m<sup>2</sup>

**Table 1:** SG Digit codes

SG Digit code(s) of the proposed site(s) for all alternatives:	Erf 23311	C	0	6	7	0	0	0	4	0	0	0	2	3	3	1	1	0	0	0	0	0
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Figure 2: Preferred site layout.



## 5 PROJECT DESCRIPTION

The proposed development is located on Erf 23311, Brackenfell, Western Cape. The site is situated within Ward 8 of the City of Cape Town Metropolitan Municipality at the following coordinates: 33°54'30.63" S; 18°40'29.19" E. The proposed site is approximately 25 567 m<sup>2</sup> in extent whereby the proposed site for development is highly disturbed/transformed due to the existing fuel service station on site. The proposed development will include the establishment of:

- One (1) x 90m<sup>3</sup> underground storage tanks (USTs) with a total storage capacity of 90 m<sup>3</sup>, and associated infrastructure.

No site alternatives were considered for this proposed development due to:

1. The proposed site for development is already developed (existing development footprint). Developing at different site will greatly increase the associated environmental impacts.

## 6 IDENTIFICATION OF DUST SOURCES

The undertaking of bulk earthworks, the access roads and services related to the project, which include the following activities, could be of a dust generating nature:

- The excavation, loading, handling and haulage of construction materials, including gravel and sand.
- The *in situ* compaction from surface using a heavy vibratory roller and the placing of strip foundations.
- The removal of the soil to stockpile, followed by *in situ* compaction using a heavy vibratory roller and the re-compaction of the stockpiled sand in layers up to the required build platform level.
- The excavation, loading, handling and haulage of construction materials, including gravel and sand for the placement of the 90m<sup>2</sup> storage tanks (USTs).

To minimise the generation of dust,

1. Access roads and gravel working areas can be treated with dust suppressing agents like *Dustex* or watered with a water cart. These mitigation measures are mostly effective where there are flat gravel/ fill surfaces.
2. To mitigate the formation of dust during the construction activities, construction materials, where possible, must be kept moist by means of water carts and/or dust suppressing fog sprayers that can be positioned on site.
3. Lastly, straw/hay can be worked into the surface of fill slopes.

Although some dust control measures are already accommodated in the Environmental Management Programme (EMPr), additional measures were added to the Dust Management Plan (DMP) to prevent possible future dust pollution by decreasing the amount of probable dust fallout. Dust control measures are prohibited from utilising potable water for misting or suppression systems during construction.

A complaints register must be retained on site by the appointed contractor(s) during the Construction Stage of the project on instruction from the applicant/client. City officials will be able to review the complaints register during site inspections and will also be able to record commentary in the Site Correspondence books retained inside the site offices (Contractors and/or Site engineers' representatives).

Buffdaxco 3 (pty) Ltd. will also provide an implementation progress report to the air quality officer at agreed time intervals when required. The Dust Management Plan will also be assessed on an annual basis, or as required for specific dust control measures, in order to determine its compliance with this Dust Management Plan.

## 7 IMPLEMENTATION STRATEGY AND MITIGATION ACTIONS

### 7.1 CURRENT DUST MANAGEMENT

The dust control measures provided in **Table 2** must be applied to the future infrastructure construction on the R300 Fuel Service Station Development site.

**Table 2.** Current Dust Control Measures

Source	Dust Control Measures	Person Responsible
Movement of vehicles around the site	Roads sprayed with dust suppressant (see <b>Appendix A</b> for MSDS). To be re-applied when road 'crust' is damaged or abnormal rains have washed suppressant into soil.	Applicant/Client and main contractor
Wetting of stockpiles to prevent aeolian erosion	Use of hose installed at various points around stockpile area to wet product before loading commences. No watering with potable water is permitted.	Applicant/Client and main contractor

### 7.2 ADDITIONAL DUST MANAGEMENT

Additional dust control measures provided in **Table 3** have been identified to assist in decreasing the amount of dust fallout on the site.

**Table 3: Additional Dust Control Measures**

<b>Number</b>	<b>Source</b>	<b>Dust Control Measures</b>	<b>Person Responsible</b>	<b>Implementation</b>
<b>1</b>	<b>Construction</b>	All machinery generating emissions must be regularly serviced and maintained such that their emissions are acceptable.	Applicant/Client and Main contractor	At all times
<b>2</b>	<b>Construction</b>	If cement silos are utilised, filters must be installed to prevent excessive generation of cement dust during deliveries. Any cement mixed on site must be undertaken with caution to prevent cement dust from becoming airborne.	Applicant/Client and main contractor	At all times
<b>3</b>	<b>Construction</b>	Windblown dust (aeolian erosion) and sand may generate considerable negative impacts (e.g. reduced visibility for vehicles travelling along adjacent roads such as Bottelary Road, and nuisance to neighbours/adjacent erven).  The use of water bowsers and wetting down of loose soil areas, as well as the erection of shade netting screens to prevent off-site movement of dust is required and/or other appropriate action to minimise this impact.	Applicant/Client and main contractor	At all times
<b>4</b>	<b>Construction</b>	Rubble, waste and dust generated on higher open floor levels vulnerable to the effects of the wind must be covered and removed regularly to prevent becoming windblown and migrating off site.	Applicant/Client and main contractor	At all times
<b>5</b>	<b>Construction</b>	The use of straw stabilisation or mulching of exposed sandy areas may also be considered in consultation with the ECO.	Applicant/Client and main contractor	At all times
<b>6</b>	<b>Construction</b>	The height of exposed loose material stockpiles, such as sand, rubble, etc. must be minimised as far as possible and covered or screened during high wind conditions, overnight and over weekends.	Applicant/Client and main contractor	At all times
<b>7</b>	<b>Construction</b>	As a general best practice guideline, the Water By-law (PG 6378) issued by the City of Cape Town (2006) must be adhered to at all times. In particular, no potable water may be used for dust suppression purposes. This documentation is available at the following website: <a href="http://www.capetown.gov.za/en/Water/Documents/Water_By_Laws.pdf">http://www.capetown.gov.za/en/Water/Documents/Water_By_Laws.pdf</a>	Applicant/Client and main contractor	At all times

Number	Source	Dust Control Measures	Person Responsible	Implementation
8	Construction	Spraying of stockpiles with a fine mist of non-potable water for 10 - 15 minutes during windy conditions. Municipal potable water must not be used.	Applicant/Client and main contractor	Immediately

### 7.3 CONTINGENCY ACTIONS

During windy conditions, it is possible that dust emissions may still be generated from the site. The actions provided in **Table 4** must be taken to ensure that dust levels generated by the activities on the site do not create a nuisance.

All site staff will be responsible for reporting high or abnormally dust conditions to one of the Directors as soon as is reasonably practicable.

**Table 4: Contingency Actions**

Trigger	Actions	Person Responsible
Visible dust emissions occurring from stockpiles or other site open areas during windy days.	Investigate cause and implement necessary control to prevent further emissions (e.g. ceasing of work in peak wind periods or increasing frequency of watering).	Applicant/Client and main contractor
Visible dust emissions occurring due to operational processes	Investigate cause and implement necessary control to prevent further emissions (e.g. maintenance on misting system).	Applicant/Client and main contractor

## 8 DUST FALLOUT MONITORING PLAN

Dust monitoring is not mandatory for the proposed development and as such has not formed part of this Dust Management Plan but will be put it in to place should this be required during the construction phase and based on authority and community feedback.

## 9 COMPLAINTS REGISTER

All complaints received by the applicant/client and the main contractor will be handled by the applicant/client and the details will be recorded in the complaints register (see **Appendix B**).

Site staff receiving complaints must complete the following procedure:

- Record contact details of complainant



- Record details regarding complaint (including date, time and location)
- Repeat back contact and complaint details and confirm with complainant
- Confirm and record acceptable follow up time with complainant
- Contact one of the Directors immediately and report back

The complainant will be contacted, and an investigation of the complaint will be initiated within 24 hours of receiving the complaint.

Once the investigation is complete, the complainant is to receive a written response outlining the procedure and findings. If requested, the findings of the investigation can be explained to the complainant either in person or over the phone.

The complaints register must be kept updated and available for DEA&DP / City scrutiny on request.

## **10 CONCLUSION**

Buffdaxco 3: R300 Fuel Service Station (Erf 23311) will provide an implementation progress report to the air quality officer at agreed time intervals when required. Buffdaxco 3 will also assess its compliance with this Dust Management Plan on an annual basis or as required for specific dust control measures.

This plan will also be reviewed and revised by Buffdaxco 3:

- On an annual basis
- If there are any major changes to the operation
- In response to any complaint or incident resulting in high dust emissions

# **APPENDIX A**

## **Dustex Powder MSDS**

**(To be provided by principal contractor)**

**APPENDIX B**

Complaints Register

(To be provided by principal contractor)