

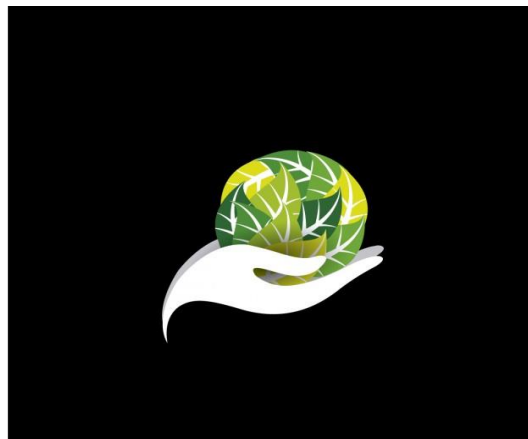
**DRAFT BASIC ASSESSMENT REPORT (DBAR) FOR THE PROPOSED
DEVELOPMENT OF FILLING STATION ON THE FARM MOLOPO 302
JO, MAHIKENG LOCAL MUNICIPALITY, NORTH WEST PROVINCE**

DEPARTMENTAL REFERENCE NUMBER: NWP/EIA/74/2020



PREPARED BY:

BLK2 ENVIRONMENTAL SOLUTIONS (PTY) LTD



PREPARED FOR:

GOFAONE SECURITY AND PROJECT COMPANY (PTY) LTD

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LIST OF ABBREVIATIONS

APPAAir Pollution Prevention Act
BARBasic Assessment Report
BIDBackground Information Document
CBACritical Biodiversity Area
CRRComments and Response Report
DAFFDepartment of Agriculture, Forestry and Fisheries
DEDECT ...Department of Economic Development, Environment, Conservation and Tourism
MLMMahikeng Local Municipality
DWSDepartment of Water and Sanitation
DPWRT ..Department of Public Works, Roads & Transport
EAEnvironmental Authorisation
EAPEnvironmental Assessment Practitioner
EIAEnvironmental Impact Assessment
EMFEnvironmental Management Framework
EMPrEnvironmental Management Programme
GNRGovernment Notice Regulation
I&APInterested and Affected Party
NEMANational Environmental Management Act, 1998(Act 107 of 1998)
NEM: BA ...National Environmental Management: Biodiversity Act
NEMANational Environmental Management Act (No. 107 of 1998) (as amended)
NEMAANational Environmental Management Amendment Act
NEMWA ...National Environmental Management: Waste Act (No. 59 of 2008)
PPP Public Participation Process
SDFSpatial Development Framework
SEAStrategic Environmental Assessment
SAHRASouth African National Heritage Resources Act, 1999 (Act 25 of 1999)

GLOSSARY OF TERMS

Applicant-Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in sections 24(5), 24M and 44 of the National Environmental Management Act, 19998 (Act No. 107 of 1998).

Alternatives - In relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –

- i. The property on which or location where it is proposed to undertake the activity;
- ii. The type of activity to be undertaken;
- iii. The design or layout of the activity;
- iv. The technology to be used in the activity, and;
- v. The operational aspects of the activity.

Department of Economic Development' Environment, Conservation and Tourism (DEDECT) - The Provincial Directorate of the National Department for Environmental Affairs. This Department is responsible for evaluating the viability of the development proposal and issuing the appropriate Authorization.

An EAP- is a person who manages an application for environmental authorisation for an applicant.

Ecosystem – A dynamic system of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Environment - The surroundings within which humans exist and that are made up of

- i. The land, water and atmosphere of the earth;
- ii. Microorganisms, plant and animal life;
- iii. Any Part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental authorization – The authorization by a competent authority of a listed activity.

Environmental Assessment Practitioner (EAP) – The person responsible for planning, management and co-ordination of environmental impact assessment, strategic environmental assessments, environmental management plans or any other appropriate environmental instrument introduced through regulations.

Environmental impact - An environmental change caused by some human act

Environmental Management Programme (EMPr) - A management programme designed specifically to introduce the mitigation measures proposed in the Reports and contained in the Conditions of Approval in the Authorization.

Impacts assessment- The objective of the assessment of impacts is to identify and assess all the significant impacts that may arise from the undertaking of an activity.

Indirect impacts- Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Interested and Affected Party (I&AP) – Any individual, group, organization or associations which are interested in or affected by an activity as well as any organ of state that may have jurisdiction over any aspect of the activity.

Mitigation measures- Mitigation measures are the steps that are taken to reduce the identified impacts as far as possible. Mitigation measures will address the predicted factors of the impacts clearly to demonstrate how the impacts will be reduced through mitigation.

NEMA EIA Regulations - The EIA Regulations in terms of the National Environmental Management Act (Act 107 of 1998) (Government Notice No. R 326, 327 and R 325 in the Government Gazette of 07 April 2017 refer).

No-go alternative – The option of not proceeding with the activity, implying a continuation of the current situation / status quo.

Public Participation Process (PPP) - A process in which potential Interested and Affected Parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

Registered Interested and Affected Party – All persons who, as a consequence of the Public Participation Process conducted in respect of an application, have submitted written comments or attended meeting with the applicant or environmental assessment practitioner (EAP); all persons who have requested the applicant or the EAP in writing, for their names to be placed on the register and all organs of state which have jurisdiction in respect of the activity to which the application relates.

Significant impact – Means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Spatial Development Framework (SDF) - A document required by legislation and essential in providing conservation and development guidelines for an urban area, which is situated in an environmentally sensitive area and for which major expansion is expected in the foreseeable future.

1. INTRODUCTION

BLK2 Environmental Solutions (Pty) Ltd has been appointed as the independent Environmental Assessment Practitioner (EAP) responsible for facilitating the legally required Environmental Authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, read with the Environmental Impact Assessment Regulations, (07 April 2017 as amended).

The applicant, **Gofaone Security and Project Company (Pty) Ltd** proposes the development of a filling station with installation of 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (ℓ) (combined storage capacity 184 cubic metres).

- Four posted canopy;
- Four pump islands in forecourt able to service a maximum of eight vehicles concurrently
- Develop a convenience store and fast food outlet, ATM, generator (power for backup),
- Develop access/egress points, and provide a hardened surface and parking facilities.
- Construct an ablution facility that will drain in a proposed septic tank.
- Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
- Site storm water drainage linking to municipal storm water drain.

The relevant application has already been lodged with the Department of Economic Development, Environment, Conservation and Tourism (DEDECT) for authorisation, with the reference number as **NWP/EIA/74/2020**.

The proposed development triggers the need for Basic Impact Assessment in terms of the following listed activities under the NEMA EIA Regulations GNR 327 of 07 April 2017. The triggered listed activity is as follows:

Government Notice R.327, Activity No.14: *“The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres”* and **GNR. 327: 27** *“The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan”.*

As such, a Basic Assessment Application process (BAR) will be undertaken to obtain an Environmental Authorisation for the proposed project.

2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) AND THE APPLICANT

(a) Details of— (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;

NAME OF COMPANY:	BLK2 Environmental Solutions (Pty) Ltd
CONTACT PERSON	Philadelphia Lesedi Bonokwane
POSTAL ADDRESS:	5645 Mabele Street Unit 14 Mmabatho 2735
CONTACT NUMBER:	071 3216 088
FAX NUMBER:	086 664 6043
E-MAIL:	lesedibonokwane@gmail.com
QUALIFICATIONS	MSc Environmental Management (UFS)

2.1 PROFILE AND EXPERIENCE OF THE EAP

Ms. Philadelphia Lesedi Bonokwane has gained abundant experience in the environmental field by working with a company that dealt with the same application. She possesses amongst her qualifications, Masters in Environmental Management with the University of the Free State.

See **Appendix I**, of the detailed CV of the applicant.

APPLICANT' DETAILS:

3. SITE LOCATION

(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;

3.1 PROPERTY DESCRIPTION/PHYSICAL ADDRESS

Province	North West Province
District Municipality	Ngaka Modiri-Molema District Municipality
Local Municipality	Mahikeng Local Municipality
Ward Number(s)	02
Farm name and number/Erf	Molopo 302 JO
Portion number	N/A
Site coordinates	25° 49' 26.99"S; 25° 30' 12.22"E
21 digit Surveyor General Code	TOJ0000000000000000302

The site is located on Molopo 302 JO, Mahikeng Local Municipality on Bray Road, North West Province. The geographical location/coordinates are: **25° 49' 26.99" S; 25° 30' 12.22" E**. There is an existing access road (connecting from the Bray Road; Mahikeng-Airport Road) close to the site, therefore; there will be no need for a new road construction

The figure below indicates the aerial location of the site:

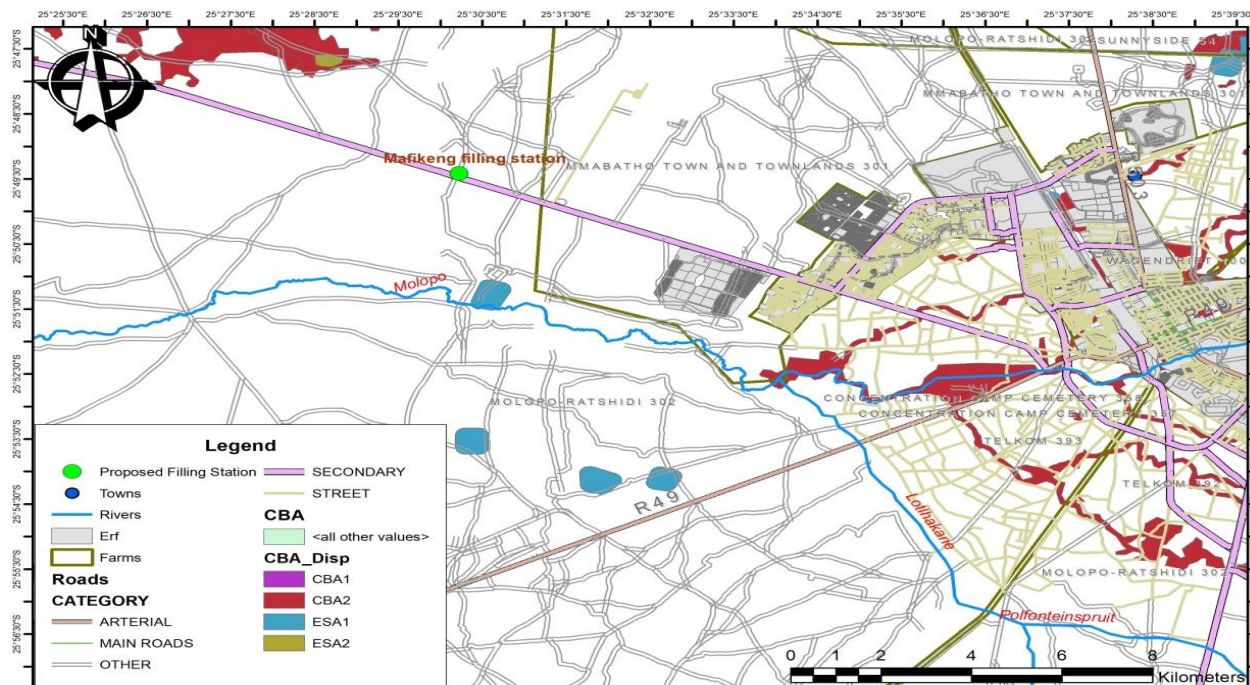


Figure 1: Topographical location of the proposed site

The figure below shows the aerial view of the site.



Figure 2: Locality map of the proposed site

3. SITE DESCRIPTION

A description of the scope of the proposed activity, including—

- (i) all listed and specified activities triggered and being applied for; and
- (ii) a description of the activities to be undertaken including associated structures and infrastructure[];

The proposed project entails the following: installation of 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (combined storage capacity 184 cubic metres).

- Four posted canopy;
- Four pump islands in forecourt able to service a maximum of eight vehicles concurrently
- Develop a convenience store and fast food outlet, ATM, generator (power for backup),
- Develop access/egress points, and provide a hardened surface and parking facilities.
- Construct an ablution facility that will drain in a proposed septic tank.
- Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
- Site storm water drainage linking to municipal storm water drain.

The project triggers the following listed activity:

Indicate the number and date of the relevant notice:	Activity No (s) and Activity Description (in terms of the relevant notice)	Describe each listed activity as per project description
GN.R. 327, 07 April 2017	Activity No.: 14: <i>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</i>	The development of a filling station with eight (8) tanks 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and Unleaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (combined storage capacity 184 cubic metres).

4. PLANNING CONTEXT

The proposed site is located within the farm Molopo 302 JO, there is no any existing infrastructure. Therefore, there is no any activity taking place at the moment.

4.1 Water Provision

There is no existing municipal connection line to the site. The development will utilize borehole water which is yet to be applied and installed.

4.2 Electricity

The proposed development of a filling station will connect to the existing electrical network of Mahikeng Local Municipality. Beka Lighting 250 watt metal halide lamps will be utilised for under-canopy lighting instead of the existing 400 watt metal halide lamps. Solar water heating will be utilised instead of an electric geyser. Thick, blanket type foil faced blankets will be used for roof insulation, as opposed to no insulation. This will reduce the air conditioning demand of the building.

Pre-setting the air conditioning unit to a temperature of approximately 21°C as opposed to having the operator control the temperature, has proven to reduce energy utilised by the unit. Movement and light sensors on interior lights as opposed to manual control of the interior lighting will further reduce energy demand. Day-night sensors on the exterior lights will also ensure lights do not stay on unnecessarily.

The design of the development must optimise the use of natural light in all components through the correct positioning and sizing of windows and thereby saving the need to install additional lighting and associated long terms energy use. The roofing of all components of the development must be insulated as opposed to not insulated, thereby reducing energy use for heating and cooling of the buildings

4.3 Access Road

There is existing access roads (R49-Bray Road from Mahikeng via Airport Road) and there is side along the access gravel road connecting from the Bray Road; there will be no need for a new road construction.



Picture 1: Site along the access gravel road connecting from the Bray Road

Picture 2: Bray Road from Mahikeng via Airport Road

4.4 Waste management

During the construction phase, building rubble and a small amount of domestic waste will be generated. The contractor will have to provide adequate containers for the collection of waste. The applicant will have to ensure that the contractors remove the said building rubble and domestic waste to the licensed Mahikeng Waste Disposal Site. Any hazardous waste (e.g. soil contaminated with fuel/oil, paint tins, etc.) will have to be disposed at a Hazardous Waste Disposal Facility by a company dealing with such waste. During the operational phase, domestic waste will be stored collected by the Waste Collection Company appointed by the applicant as the area is outside of the municipal service area and disposed of at the licensed Mahikeng Waste Disposal Site. Once the application has been approved the relevant waste contractor will be appointed. The appointment letter will be sent to the Department.

It is recommended that recycling forms part of waste management at the filling station in order to reduce the amount of waste to be disposed of. Items such as paper, cans and bottles should be separated at source and either reused or collected by a recycling company. Any hazardous waste (e.g. empty oil cans, contaminated cloth/paper/sand, etc.) should be stored in a separate bin and disposed of by an appointed company at a licensed Hazardous Waste Disposal Facility.

4.5 Storm water control measures

There is no storm water identified at the site. Rain that falls onto the canopy (roof) of the filling station will be treated as clean water and routed separately to the overall

storm water management system, which would comprise of catchpits and concrete storm water pipes (with a recurrence interval of 5 years) that would connect to the existing 600mm diameter pipe.

The forecourt would be located on top of a concrete containment slab. A storm water channel with catchpit would be installed along the southern boundary of the forecourt to capture any polluted runoff water. A 5m x 10m containment slab (with catchpit) would also be provided at the remote diesel island. Water from the forecourt and fuel delivery pavements will be routed via a grease/oil separator in order to remove any potential contaminants. The installation of a silt trap is advisable in order to ensure that clean surface water is not contaminated with hazardous material (oil/or fuel).

4.6 Geohydrological Assessment

The geohydrological assessment attached on this report as Appendix G was conducted by Geo-Themo Project & Investments (Pty) Ltd on 15 March 2021.

Terms of reference for the Geological Study/Assessment were to:

- To assess the geological character of the subsurface materials underlying subsurface materials underlying the existing fuel storage and dispensing facility.
- To assess the inferred hazard posed by underlying rock strata on the sustained use of the facility, and
- To recommend suitable precautionary- and mitigation measures to manage the inferred risk at a tolerable level.

4.6.1 Groundwater occurrences

The regional average groundwater level is between 20 and 30m while other areas can be less than 15m. The local average groundwater levels were calculated to 18.37m based on the recorded water levels from the sampled boreholes in September 2013. The minimum water level (7.32m) was recorded on one of the 5 tested boreholes in the area borehole, while maximum water level recorded was 31.20m. The groundwater classification of the study area is considered to be interregular and fractured with the yield that ranging around 0.1-0.5l/s. Possibility of getting getting higher yeild are limited and needs to be proved by pump tests.

The **electrical conductivity of the groundwater ranges between 70-300 mSm**. The regional water quality has shown to be significantly good for portable supply (drinking purpose) however actual sampling must be taken once drilling of new borehole is conducted for analysis.

The local geology consists mainly of wide belts of basic or mafic lavas in the south, with intrusions of basic mafic and ultramafic rocks. Virtually the entire northern potations of the sub-catchment is underlain by wide expanses of sand and intermediate intrusive rocks, with intercalated assemblages of compact sedimentary and intrusive rocks and

are also not well exposed and are overlain by a thin layer of Calcrete which sometimes overlain by lenses of ferricrete underlying the topsoil.

The Calcrete overlies fine grained slates, Shales and Mudstones belonging to the Rietgat Formation. The shales are frequently quarried for brick making at the bottom of the quarries in the vicinity of Molelwane micaceous granite is exposed. Elsewhere this weathered Tuffs and Shales may belong to the younger Allanridge Formation but a contact was observed.

4.6.3 RECOMMENDATIONS

Based on the assessment of the existing groundwater conditions, groundwater can be safely used for the purpose of supplying water for the petrol filling station. No groundwater contaminations occur in the vicinity of the study area.

The boreholes need to be at least 60m deep or passes the water level by 5m with perforated casing to capture floating pollutants such as Light Non -Acquoes Phase Liquids (LNAPLs). Storage tanks to be installed according to the relevant guidelines.

4.7 SPECIALIST STUDIES RECOMMENDED BY SCREENING TOOL

Screening tool identified the following specialist' assessments to be commissioned; however, it must be noted that Moletsamongwe is identified on the screening tool as the whole of Molopo; it covers all the villages within the Molopo area. The site earmarked for this project in Moletsamongwe is already disturbed. It has a manmade wetland on the opposite side of the road.

The map below indicates the land use around the proposed area:

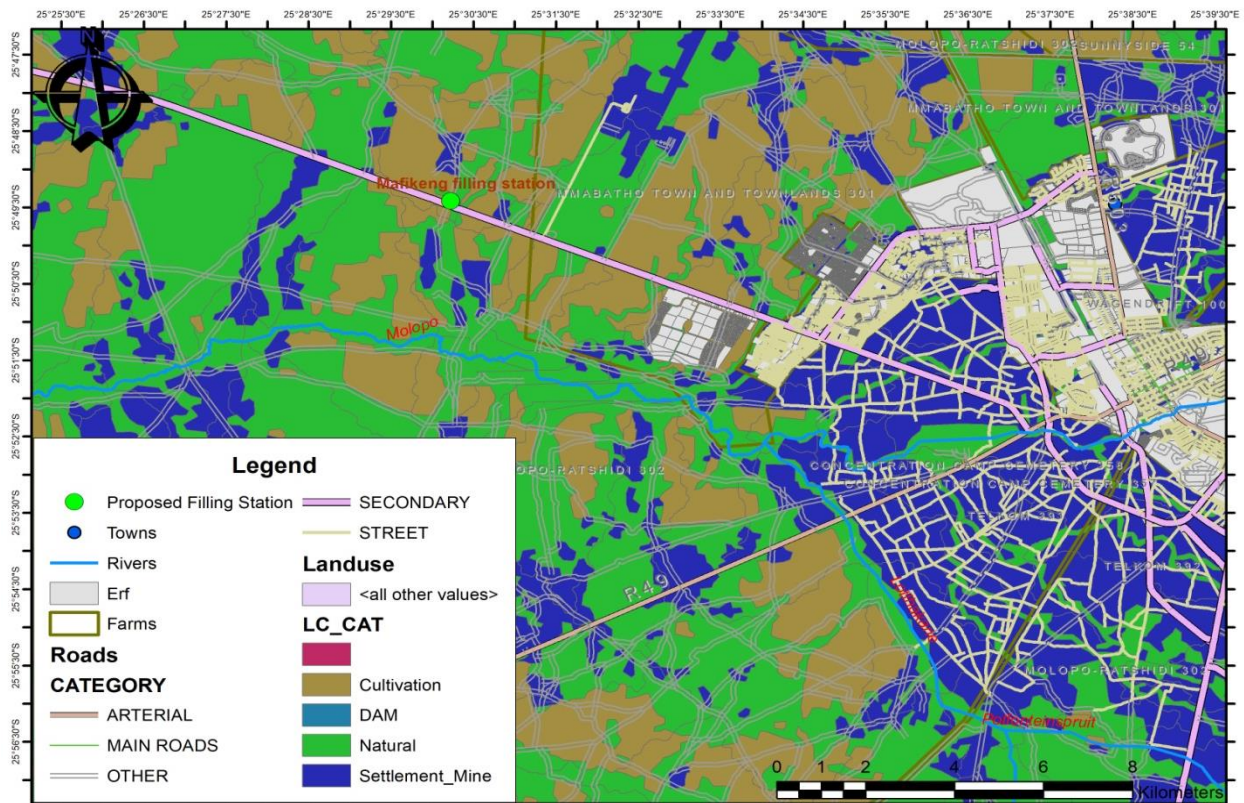


Figure 3: Land use map around the proposed site

The screening tool identified the following impacts on site:

→ Agricultural Impact Assessment;

The proposed site has been in a “lull” state for a while and has never been utilized for agricultural services, other than animals that would graze on the site, but due to its proximity to the Bray Road, grazing is limited to the site far away from the proposed site. The agricultural impact is Low as the project is not affecting the fertility and agricultural utilization of the site. The land use map of the site indicates the natural area as land use more than agricultural.

→ Archeological Impact Assessment;

The proposed site is already disturbed and possibilities of archeological products are little if not zero, however, should the construction of a filling station identify any, the project has to be ceased and the relevant department be consulted. The impact is very Low.

→ Paleontological Impact Assessment;

The proposed site is already disturbed due to animal grazing and could have been previously used for cultivation. There are no fossil observed on site should the construction of a filling station identify any, the project has to be ceased and the relevant department be consulted. The impact is very Low.

→ Terrestrial Biodiversity Impact Assessment;

The proposed site is already disturbed due to animal grazing and could have been previously used for cultivation. There are no plants or animal species that inhabit the site that has been observed; should the construction of a filling station identify any, the project has to be ceased and the relevant department be consulted. The impact is very Low.

→ Aquatic Biodiversity Impact Assessment;

The proposed site has no waterbodies and therefore no terrestrial biodiversity could be identified. NB: The screening tool covers the whole of Molopo region and not only the Moletsamongwe village. The impact is very Low.

→ Hydrology Assessment

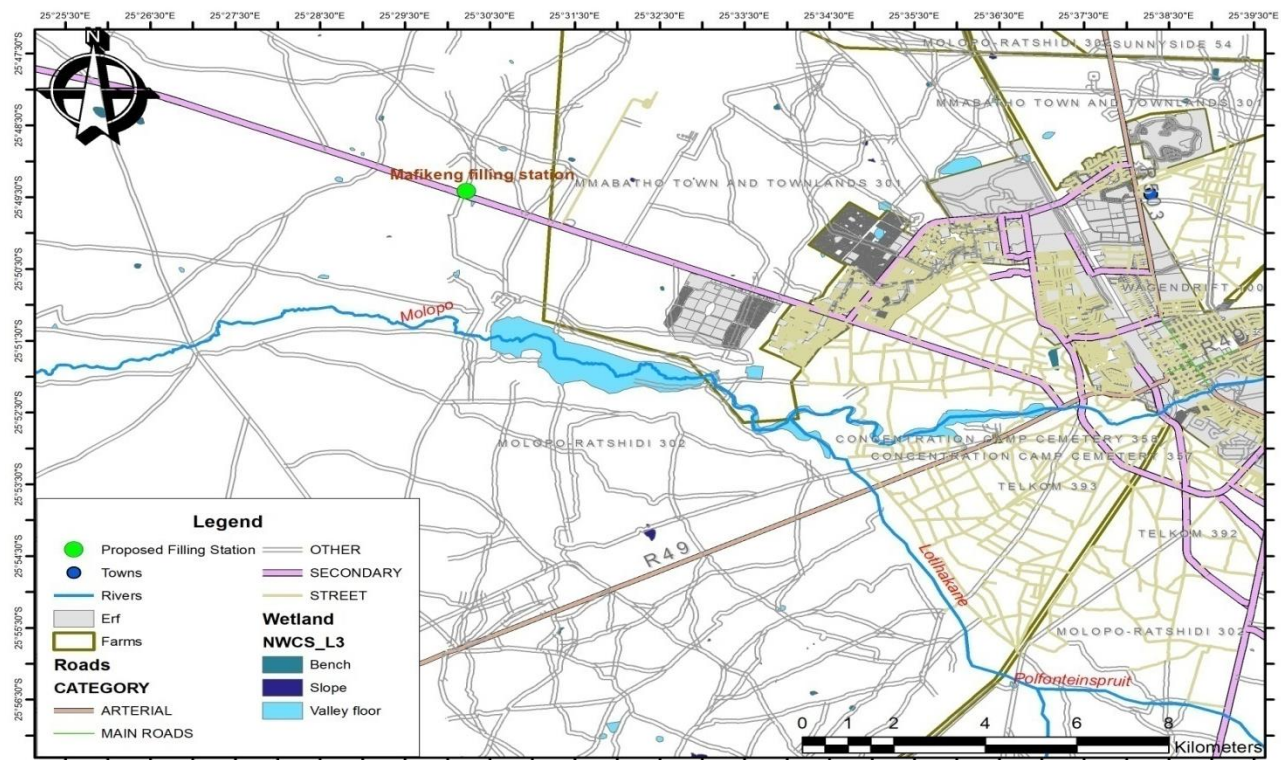


Figure 4: Wetland's map of the proposed area

The periodical river in the area is far from the proposed site and the artificial wetland is across the road and there are no waterbodies on site. There is no need to conduct a hydrological study, however, a geohydrological study commissioned for this project found the following: 1) the groundwater level is between 20 and 30 mbgl, whereas in some areas it can be less than 15 mbgl. Based on previous studies, the average groundwater levels were measured to be between 5 to 30 mbgl. 2) Groundwater quality is good with conductivity ranging between 70 and 300 mS/m, whereas the Total Dissolved Solids (TDS) ranges from 500 to 750 mg/l. Noise Impact Assessment.

→ Traffic Impact Assessment;

The site is located along the R49 (Bray Road); the observation is that there are no high traffic levels on the road. The observed traffic levels are mostly moderate in peak hours (morning-afternoon) transporting school learners and workers and very quiet during the day.

→ Geotechnical Assessment;

The geohydrological study conducted indicates that the proposed site comprises mainly of overlying quaternary sedimentary sands and calcrete underlain with wide belts of basic to mafic and basic lava interbedded with quartzite with occasional quartzitic veining and dyke intrusion. Shales and mudstones belonging to the Rietgat Formation are also identified.

→ Socio-Economic Assessment;

The study has not been commissioned, however, the Mahikeng Local Municipality Integrated Developmental Plan (IDP) identified the municipality as predominantly rural municipality and its rural economy is unable to provide individuals with remunerative jobs or self-employment opportunities. An estimated 55% of the people in the municipality had no income in 2007. In general terms, the majority of households in the municipality earns less than the poverty line (about R1, 600 per household per month) and can be considered poor. It is therefore anticipated that the development of a filling station will create the necessary job opportunities for the Moletsamongwe community.

→ Animal Species Assessment.

No animal species were identified on site as the proposed site is already disturbed.

→ Plant Species Assessment, and

The vegetation of the area is Kalahari Thorns Bushveld and the biome is the Savannah.

The only specialist study conducted for this development is the geohydrological impact study due to the underground installation of tanks. Other specialist studies were not commissioned at this stage as the site is already disturbed by nearby communal farming and settlements; and therefore those studies will not be possible at this stage. However, the screening tool required the above specialist report because it covered the larger extent of the area.

5. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

- (e) a description of the policy and legislative context within which the development is proposed including—
- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and
 - (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
Constitution of the Republic of South Africa; Act (Act 108 of 1996 (section 24 Bill of Rights)	Ensure that an environment is not harmful and is protected.	DEDECT; DEA	1996
National Environmental Management Act (Act No. 107 of 1998) (NEMA) and the NEMA Environmental Impact Assessment (EIA) Regulations (2014)	NEMA aims to provide for cooperative environmental governance by establishing principles for decision-making on all matters relating to the environment and by means of Environmental Implementation Plans (EIP) and Environmental Management Programmes (EMPr). The development triggers the following listed activity; Government Notice R.327, Activity No. 14: “ <i>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</i> ”	DEDECT; DEA	1998
Petroleum Pipelines Act, 2003 (Act No.60 of 2003)	The objective of the act is to ensure the safe, efficient, economic and environmentally responsible transport loading and storage of petroleum.	Department of Energy (DME)	2003
Petroleum Products Act, 1977 (Act No. 120 of 1977)	These regulations set out specifications and standards for petroleum products that may be sold for consumption in South Africa. The specifications and standard include allowable sulphur content in diesel and metal content in petrol. Metal and sulphur content in petrol and diesel respectively have a direct impact on air emissions and pollution. Reference is specifically made to SANS 1598 and 342 for petrol and diesel respectively.	Department of Energy (DME)	1977

National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The act requires the project applicant to consider the protection and management of local biodiversity. To this end, an ecological assessment is being undertaken to assess the flora and fauna on site.	DEDECT; DEA	2004
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)	The OHS Act provides practical guidelines for the health and safety of workers as well as people in connection with plants and machinery. It also provides guidelines for the protection of people other than people at work against hazards that may arise out of a connection with the activities of persons at work.	Department of Labour	1993
National Water Act (Act No. 36 of 1998)	Ensure water related issues are identified and applied for before operation of the activity.	Department of Water and Sanitation	1998
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Introduce an integrated and interactive system for the management of the national heritage resources to promote good government at all levels and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations;	North West Provincial Heritage Resources Authority (NWPHERA)	1999
National Building Regulations and Standards Act, 1977 (Act 103 of 1977) and amendments	To provide for the promotion of uniformity in the law relating to the erection of buildings in the areas of jurisdiction of local authorities; for the prescribing of building standards; and for matters connected therewith.	Department of Trade and Industry	1977
South African Bureau of Standards 'SANS 10400 X and 10400 XA	The application of the National Building Regulations in terms of environmental sustainability and energy usage in buildings.	Department of Trade and Industry	
National Road Traffic Act, 1996 (Act 93 of 1996)	Regulations relating to the transportation of dangerous goods and substances by road	South African National Road Agency Limited	1996
South African National Standard (SANS) 10 089 The Petroleum Industry. Part 1: Storage and distribution of petroleum products. Part 2: Electrical Code Part 3: The Installation of Underground Storage Tanks etc	<ul style="list-style-type: none"> This part of SABS 089 covers provisions for the installation of underground storage tanks of individual capacity not exceeding 85 000 R, pumps/dispensers and pipework at service stations and consumer installations. This standard does not cover the installation of pressurized underground storage tanks such as liquefied petroleum gas (LPG) storage vessels. An environmental impact assessment should be done before any construction and installation of underground tanks for filling stations. 	SABS	2008 2007 1999
Regulations regarding the use of payment cards to purchase petroleum products at a retail site (Government Gazette Notice No. 731 of 9 July 2009).	To regulate the distribution and sale of petroleum.	Department of Energy	2009

Regulations regarding the display of prices at which petroleum products are available for sale (Government Gazette Notice No. 376 of 14 May 2010)	To regulate the distribution and sale of petroleum.	Department of Energy	2010
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6. MOTIVATION FOR THE NEED AND DESIRABILITY FOR THE PROPOSED DEVELOPMENT

(f) A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;

According to the DEA's (2014) Guidelines on Need and Desirability, it is highlighted that "to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas ("spatial targeting") with potential for economic development, with development to serve the broader societies' needs equitably."

Through the review of the status of the erf and receiving environment; the zoning rights and broader planning imperatives of the area; the socio-economic impacts; and the demand for the proposed service station development, the need and desirability of the development is outlined.

Site review:

The site belongs to the applicant/proponent and there is no existing infrastructure. The project is located along R49 along the Bray Road from Mahikeng via Airport Road. There is also access gravel road connecting from the Bray Road. Most motorists, busses and trucks use the R49 road. The filling station will serve as a convenient service along the busy road and therefore motorists could use to avoid driving long distance to buy fuel. The local community will rely on the convenience store for their daily small purchases (newspapers, fast foods and etc.) as they are far from shopping centres.

The trading market is considered to be good as it will consist of the following:

- retail/commercial traffic;
- a combination of local and transient traffic.

The development will also be convenient for visitors from surrounding places and beyond passing through R49 Bray Road as they would no longer have to drive into congested Mahikeng town for refueling. Additional job opportunities would be provided, which could aid in the economic stability of a few families.

Spatial Planning & Environmental Management impacts:

The proposed development falls within one of the focus areas identified on North-West provincial Development Framework 2016 and is in line with the North-West Provincial Spatial Development Framework which if focused on improving social and economic

development of North-west villages. It is prioritizing on promoting all the projects which are aimed at improving people's livelihood especially in the rural areas.

The area is zoned in a residential area. Since the proposed development aligns to the zoning requirement of the municipality, it does not contravene the broader spatial planning and environmental management imperatives in place in the area (i.e. IDP, SDP and EMF). In addition, R49 is a designated Road that connects Bray Road to Mahikeng Airport road.

This project site would benefit greatly from removal of rubbish and improvement of services, as the existing culture of dumping rubbish in any open space by the residents. The proposed development is in alignment with the IDP as it will create jobs, but attention needs to be placed on the control of pollution.

Impacts on surrounding business:

The viability of the development is assessed in accordance with its impacts on competitor stations and the projected volume of fuel that would be sold based on factors such as traffic volumes and patterns. To assess the impact of the proposed filling station on other filling stations, the shared traffic streams were considered. The amount of traffic shared between the proposed site and existing sites depends on the distance between the sites; number of lanes; road alignment; number of intersections between sites; and surrounding developments (e.g. shopping malls or motor showrooms that generate traffic). Shared traffic only gives an indication of the daily traffic movement patterns and no inference can be made on loss of fuel sales at existing stations.

Research indicates several factors that influence the moving market between competing filling stations (traffic-or "the market" - can fill up at any given service station and is therefore is considered to be a "moving" market). The following were observed:

→ The convenience store at a facility will play a significant role in attracting passing road users.

- Different petrol brands play a very small role in consumer motivations.
- The price of the convenience store goods plays a limited role in re-patronage.
- Aesthetic factors impact on re-patronage and total customer experience lead people to become more frequent patrons of a filling station.
- No similar facility within 10km proximity
- It is strategically located with great visibility and accessibility points
- Low residential development close to the proposed development with the potential of becoming a medium residential density, due to proposed development and potential future development.

The desirability of the development of a filling station

The project will provide fuel and is convenient to the motorists using the R49 Road. The development will also have negligible impacts on the receiving environment; it conforms to existing land uses in the vicinity and will not alter the “sense of place” of the area.

With the development of the filling station there will be a variety of possible employment opportunities available, both through the service station (e.g. pump attendants, management, and mechanics) and 1-stop shop employment (e.g. cashiers, manager, hospitality staff). These employment opportunities are most likely to benefit both skilled and unskilled workers in the surrounding local community.

Although there have been initial negative socio-economic impacts projected in terms of loss of fuel sales for the surrounding competitor service stations and a loss in a number of jobs at the existing filling stations, the number of new jobs that will be created with the proposed development will exceed the losses at other stations. Thus the proposed development will result in an overall positive impact on local employment in the area.

7. PREFERRED SITE, ACTIVITY AND TECHNOLOGY ALTERNATIVE

A motivation for the preferred site, activity and technology alternative

There is no existing infrastructure at the proposed development site. The site is located in a rural area of Mahikeng Local Municipality. There is no municipal sewer pipeline connection, no storm water system identified within the area. There is a need to develop a sustainable drainage system in order to promote healthy environment. The development will utilise borehole water as there is no municipal service. There is an existing Eskom power connection on site and generator backup will be utilised to assist during the time of load shedding. There will be no need for constructions of new route as there is existing access roads, R49 Bray Road. As a result, there will be no traffic capacity increase of the routes in the area.

7.1 ACTIVITY MOTIVATION

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
The proposed property site is currently zoned for residential development. Based on the IDP (2017)2018 and SDF (2014-2018 there is a need for mixed land use development especially in the rural area. According to Mahikeng Local Municipality IDP, there is a clear need for Local Economic Development approach which makes provision for private and public sector (Local government) community members to achieve sustainable social and Economic growth and Development. The proposed development will provide more job opportunities especially during the construction phase where an appointed construction company will be required to hire at least 99% local community members provided the skills required exist amongst the community. This opportunity will also improve the socio-economic development which in turn uplift the community well-being which is one of the IDP (2017-2018) and SDF focus.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Yes, North-West Provincial Spatial Development Framework and 2030 North-West Provincial Development plan which both identifies challenges faced by most of South African communities at provincial level and then develop strategic framework for government, new platform for growth and development. The National Development Framework informs all strategic planning frameworks across government. The proposed development is in line with the North-West Provincial Spatial Development Framework which if focused on improving social and economic development of North-west. It is prioritizing on promoting all the projects which are aimed at improving people's livelihood especially in the rural areas.			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The proposed development is not located in the urban edge but in rural areas of Mahikeng.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
The proposed construction of the filling station with a convenience store is not located within the flood lines or any critical Biodiversity area. Approximately 100 X 80 square meters (less than 1 ha) will be cleared during the construction phase. The area is dominated by Kalahari Thorn Plain Bushveld species which considered being one of the least threatened species. Therefore, as part of mitigation strategies and sustainable development, few trees will be replanted within the proposed area.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
No known structure plan of the municipality was identified on the proposed site.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
The proposed development site does not fall within an ecological sensitive area. The intention of this application is to develop the filling station which will be beneficial to local motorists and the vehicles using the R49 (Bray Road).			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
Not aware of any plans earmarked for the site.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
The proposed development falls within one of the focus areas identified on the Integrated Development Plan (2017/2018), 2016 Spatial Development Framework (SDF) and Provincial Development Plan (PDP). This development is also in line with the objectives of the IDP, SDF and PDP, which include the promotion of sustainable Local Economic Development, growth, and investment for local communities, as well as the development of human settlement and Spatial transformation through prioritizing on settlement planning which ensure the creation of spaces that are livable, equitable, sustainable, resilient and efficient and that support economic opportunities and social cohesion.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
The project is located along the R49 Road along the Bray Road via Mahikeng Airport Road which is far from the business with the similar operations. It serves as a convenient service along the road and therefore motorists could use it as a stop facility to fill up the fuel and avoid driving to the filling stations located in the congested areas. The local community will also rely on the convenience store for their daily small purchases (newspapers, fast foods etc.).			

<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix E.)</p>	YES	NO	Please explain
<p>Only bulk infrastructure like power line exists within the proposed development. There is no municipal pipeline connection in the area. So the water will be sourced from the borehole. No municipal sewer pipeline connection within and surrounding the project area, however, the few existing sewerages are self-developed without the help of the municipality. There are no functional stormwater systems identified within the area. There is a need to develop Sustainable Drainage System (SuDS). This Sustainable Drainage Systems offers an opportunity to protect and promote a healthy environment through designing for water quantity management. There is no need for construction of the road as there is existing road. 1. Along the access gravel road connecting from the Bray road. 2. Bray Road from Mahikeng via Airport Road.</p>			
<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	YES	NO	Please explain
<p>There seems to be no plans for the municipality to provide infrastructure on site. The Mahikeng's IDP does not indicate any infrastructural plans for the proposed area.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES	NO	Please explain
<p>The project is not part of the national programme but local project; however, it will contribute to solutions to some of the national challenges such as high rate of unemployment and service delivery in rural regions.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	YES	NO	Please explain
<p>The project is located on the R49 Road along the Bray Road via Mahikeng Airport Road which is far from the business with the similar operations. It serves as a convenient service along the road and therefore motorists could use it as a stop facility to fill up the fuel and avoid driving to the filling stations located in the congested areas. The local community will also rely on the convenience store for their daily small purchases (newspapers, fast foods etc.).</p>			

9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
Due to its location and the surrounding activity, it provides BPEO, as the site does not portray and environmental factors such as streams, wetlands or rivers which may be negatively affected by the developmental activities. Sustainable storm water management plan will be implemented during the later stages of construction and operational phases to prevent environmental impacts which may rise due to excessive surface run-offs. Furthermore, the monitoring of ground water resources, especially the proposed borehole within the project area to prevent groundwater contamination and from oil/grease spills which in turn affects the quality and quantity of groundwater supply.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
The local community and road users in general will benefit, by the construction of this filling station; in that, the motorists will be able to refill nearby and the convenience store will reduce the distance of travelling to town to buy small items like bread and newspapers. The much-needed job opportunities as a result of this service station will come in handy and highly appreciated. The site could serve as a dumping site unless it is used for such beneficial project such as a service station.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
The applicant will have to follow the conditions of Environmental Authorisation (should it be authorised) and the Environmental Management Programme, it will set a positive precedent in the area.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
The development will be operated in such a way that no individual in the region will be negatively affected. The Public Participation Process ensures that all Interested and Affected Parties' concerns are adequately addressed.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
The development is not situated within the urban edge boundaries defined by the municipality			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
The development of filling stations is not included in any of the SIPS projects.			

15.What will the benefits be to society in general and to the local communities?	Please explain
The local community in general will benefit, from the development of the proposed filling station facilities, as there are not many filling stations along the R49 Bray Road to provide a one stop facility. Truck drivers and other road users using the R49 will benefit positive on the development of the facility.	
16.Any other need and desirability considerations related to the proposed activity?	Please explain
In keeping with the requirements of an integrated Environmental Impact process, the DEAT Guideline on Need and Desirability (2010) has been utilised to provide a concise estimation of the expansion of the filling station's relation to the broader societal needs.	
The project will provide fuel (without fuel shortages due to the small tanks) and is convenient to the truck drivers and motorists using the R49 Road. The new development will also have negligible impacts on the receiving environment; it conforms to existing land uses in the vicinity and will not alter the "sense of place" of the area.	
17.How does the project fit into the National Development Plan for 2030?	Please explain
The development addresses one of the core elements of the NDP, increase in employment opportunities. The development aims at employing approximately 15 contract workers during decommissioning and construction phase of the project.	
18.Please describe how the general objectives of Integrated Environmental Management as set out in Section 23 of NEMA as amended have been taken into account.	
<p>Promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;</p> <ul style="list-style-type: none"> → Efforts have been made to identify principles suitable for this development. Those are listed on point 19 on motivation of needs and desirability of the development. ☞ identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximizing benefits, and promoting compliance with the principles of environmental management set out in section 2; → All possible impacts and their mitigation measures have been identified and significantly ranked. They are ranked without and after mitigation. Impacts that could not be mitigated pose a high risk on the environment and therefore, there is none up to this point. ☞ ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment; → This development was advertised on a local newspaper (Mafikeng Mail), compiled a Background Information Documents (distributed to neighbouring property owners and local municipality) and posters explaining project placed at the proposed site entrance and the local school. Evidence is attached as Appendix I of this report. 	

19. Please describe how the principles of environmental management as set out in Section 2 of NEMA as amended have been taken into account.

The principles of environmental management and the general objectives of Integrated Environmental Management, as set out in Sections 2 and 23, respectively, of the NEMA (No. 107 of 1998) will be considered throughout this environmental process. Applicable principles emphasize consideration of the following:

- “Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably”- The main objective of the proposed development to develop a filling station that will serve as convenience for the motorist that passes on the R49 Bray Road on the Farm Molopo 302 JO. The motorists will be also buy fast food from the restaurant, newspaper and etc. The local people will also buy small items from the shop.
- “Development must be socially, environmentally and economically sustainable” – The development attempts to be environmentally, socially and economically sustainable. Associated impacts are herewith identified, assessed and appropriate mitigation measures proposed in order to achieve sustainability.
“Pollution and degradation of the environment” – Mitigation measures will be proposed to reduce, re-use or recycle pollution. Where this is not possible, waste will be disposed of safely. With the implementation of the mitigation measures proposed in this report, it is not anticipated that significant environmental degradation will occur.

8. FEASIBLE AND REASONABLE ALTERNATIVES

A full description of the process followed to reach the proposed preferred alternative within the site, including:

(i) Details of all the alternatives considered;

(a) The property on which or location where it is proposed to undertake the activity;

The proposed developed will be on Bray Road on the Farm Molopo 302 JO. The development will connect to the existing Eskom power lines. However there is no municipal service at the area hence the applicant will have to construct proper sewer system and storm water as well as use the borehole water.

Due to this and the fact that the property is owned by the applicant, it is thus not considered necessary to investigate site alternatives for this application. The site is suitable for this type of development, in that, is located next to the route used by busses, taxis and cars, next to the road (there is no need for constructing an access road and would never increase the traffic capacity of the routes in the area).

(b) The type of activity to be undertaken;

The type of activity is the establishment of filling station with underground tanks. Owing to the fact that the application is for the establishment of an Underground Storage Tanks (UST) and for safety reasons (municipal and fire department requirements generally stipulate underground tanks in order to minimise safety risks) the underground option was considered more environmentally and practically appropriate for this site. Therefore no comparative assessment of installation of UST's versus AST's will take place as part of the alternatives assessment of this project.

(c) The design or layout of the activity;

There are industry specific Standard Operating Procedures (SOP's) in place to guide the design and installation of underground storage tanks, pumps and/or dispensers and related pipework at filling station. 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and Unleaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (combined storage capacity 184 cubic metres).

Tank layout:

Various different layouts have been identified and investigated over time and following practical experience. In the best practice tank and infrastructure layout, vent and filler lines are sloped back to the underground storage tank so that fuel does not remain in the pipes once the pumps have been switched off.

The alternative of keeping the vent and filler lines flat resulted in fuel remaining in the pipes, which could result in a product loss if a line leak occurred. The alternative identified as best practice is therefore considered the most environmentally sound and therefore no comparative assessment of tank layouts will take place as part of the alternatives assessment for this project.

Tank Size

23 000litre' tanks are considered to be an adequate tank size to meet storage and sales demand and to reduce the pressure on tanker deliveries and standardise fuel storage capacity, which is a trend evident across the oil industry.

Preferred Alternative:

The applicant is proposing to install 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (combined storage capacity 184 cubic metres).

Tank material and structure:

Examples of the alternative materials and structure identified and investigated for the tank design includes:

1. Mild steel tanks with no outer protection;
2. Mild steel tanks with bitumen coating for corrosion protection;
3. Mild steel tanks with glass reinforced polyester coating (GRP); and
4. Jacketed mild steel tanks with an interstitial space between the GRP layers. This space is monitored via an electronic monitoring system which sounds an alarm and shuts down the dispensing system.

Other design considerations include tanks with and without bounce plates (which are located at the base of the tank below the dip point). Tanks without bounce plates were sometimes punctured by the wooden dipstick after many years of dipping. This leads to the failure of the tank, possible contamination and the requirement for the tank to be decommissioned and removed.

Preferred Alternative:

The best practice alternative identified for this application is a jacketed mild steel tank (double wall tanks) with an interstitial space between GRP layers within which a vacuum is held and monitored via an electronic monitoring system. The system sounds an alarm and shuts down the dispensing system on detection of any liquid in the interstitial space. The tank includes a bounce plate beneath the dip point and a tank bottom protector is installed in the dip tube. This is to ensure that the environmental risks are minimised from possible tank corrosion and puncture failure.

According to the applicant, such composite tanks have proven themselves with no recorded failure since inception of their use and are thus the preferred alternative in terms of ensuring that the environmental risks are minimized from possible tank corrosion and puncture failure. Therefore no comparative assessment of tank materials and structure will take place as part of the alternatives assessment of this project.

Underground storage tanks vs. aboveground storage tanks:

The alternative of an aboveground storage tank (AST) as opposed to an underground storage tank (UST) was identified and investigated.

Preferred Alternative:

Owing to the fact that the application is for the establishment of an Underground Storage Tanks (UST) and for safety reasons (municipal and fire department requirements generally stipulate underground tanks in order to minimise safety risks) the underground option was considered more environmentally and practically appropriate for this site. Therefore no comparative assessment of installation of UST's versus AST's will take place as part of the alternatives assessment of this project.

Product delivery lines:

Many alternative designs have also been identified and investigated for product delivery lines. In the past, corrosion protected galvanised steel lines were used by oil companies. These lines often had various elbows and T-pieces along their length. This alternative proved problematic as the joints would often corrode and in certain environments the galvanised lines also corroded. This led to frequent line failures and the associated environmental and economic impacts.

Preferred Alternative:

The alternative identified as best practice includes secondary contained pipe work systems. There is an interstitial space between the outer and inner pipes to allow for pressure testing and monitoring. The piping is designed to be laid in continuous lengths, eliminating buried fittings in the piping system. Electro-welding technology is used to fuse the pipe lengths together, creating a strong, permanent bond.

An electronic Pressurized Line Leak Detection system is installed in all delivery lines which will detect any loss of pressure resulting from a leak. The system is connected to the submersible pumps in such a way that all pumps are immediately disabled once a leak is detected. Therefore no comparative assessment of product delivery lines will take place as part of the alternatives assessment of this project.

Monitoring wells:

Observation or monitoring wells are sunk in the sand back fill adjacent to tanks for the monitoring of groundwater and identification of possible leaking tanks. In the past, oil companies did not install monitoring wells, which resulted insignificant delays in detecting any subsurface product losses, with an associated high level of environmental risk.

Preferred Alternative:

This alternative (i.e. no monitoring wells) was identified, but the alternative identified as best practice for this application is the installation of monitoring wells in order to monitor the subsurface environment and minimize environmental risk. Therefore no comparative assessment of the use of a monitoring well versus not installing a monitoring well will take place as part of the alternatives assessment of this project.

Leak detectors:

In the past, Fuel Retailers assessed systems which had no leak detectors and found that, in the event of a system failure, product could continue to flow out of the system, with the associated higher environmental impact and risks. Installing leak detectors is thus a preferred design alternative for this application.

Preferred Alternative:

In best practice tank and infrastructure design, leak detectors are installed which immediately switch off the submersible pump contained within the tank should a leak be detected. In the past, systems which had no leak detectors were assessed and found that, in the event of a system failure, product could continue to flow out of the system, with the associated higher environmental impact and risks. Therefore no comparative assessment of the installation of leak detectors versus not installing leak detectors will take place as part of the alternatives assessment of this project.

Overfill protection devices:

The design alternative that includes overfill protection devices in the tank filling pipe work to prevent tank overfills during filling operations was identified and investigated.

Preferred Alternative:

The alternative without overfill protection was assessed, and it was found that a serious loss of product could result if the overfilling was not manually noted. This could result in surface spillage and, depending on the volumes of product lost, overland flow of product with associated environmental risk. Therefore no comparative assessment of overfill protection device installation versus not installing an overfill protection device will take place as part of the alternatives assessment of this project.

Separator system:

Best practice alternatives include the installation of a separator system.

Preferred Alternative:

The surface around the tank filler points will be sloped to a catch pit which will feed to the separator system, so that in the event of a spillage, this will be contained. The forecourt area is similarly sloped to a catchpit which discharges to the separator system. This system separates any floating fuel product from the water which is then sent into a side holding tank. The water passing through the system then feeds to the municipal sewer system. The alternative of operating without a separator system was identified and investigated and it was found that the associated environmental risk is unacceptably high.

Therefore no comparative assessment of installation of a separator system versus not installing a separator system will take place as part of the alternatives assessment for this project.

Hard surface area around pump islands in forecourt area:

The surface surrounding the pump islands will consist of 150mm reinforced concrete surface bed on well compacted ground according to the Engineers' specifications. 80mm interlocking concrete paving will be used for the paving.

(d) The technology to be used in the activity;

No technology alternatives are being considered for this project as no alternatives which are feasible or reasonable are available. The storage of fuel for dispensing is governed by SANS 10089-3, and the installation of the underground storage tanks and associated fuel handling infrastructure, will need to conform to these standards. This requirement limits the opportunity to implement alternate technology.

Stock monitoring:

Examples of technology alternatives include the use of regular manual product monitoring using a dipstick compared to the use of automatic tank gauging (ATG).

Preferred Alternative:

It is proposed to include the ATG system in this application as it allows for onsite as well as remote product determination and is identified as industry best practice. This continuous monitoring system allows for the rapid detection of any product anomalies and quicker reactions to a possible system failure, therefore reducing the risk to the environment. The system also allows for the immediate sounding of an alarm once a leak has been detected and the immediate shutting down of the dispensing system. Therefore no comparative assessment of stock monitoring will take place as part of the alternatives assessment for this project.

Sumps:

The alternative of not using sumps was identified and it was found that the environmental risk associated with a possible system failure and associated soil and groundwater contamination, was higher. Therefore no comparative assessment of using sumps versus not using sumps will take place as part of the alternatives assessment of this project.

(e) The operational aspects of the activity; and

Operation of the filling station must only take place once the necessary authorisations, licenses and/or permits are obtained from the relevant Competent Authorities. The applicant/operator must adhere to the conditions of the authorisations, permits or licenses from the authorities and ensure that all services are in place to ensure the protection of the environment.

Emergency fuel delivery cut-off during product offloading:

The operational alternative identified and investigated as industry best practice includes the continuous presence of the fuel tanker driver during product offloading. Therefore this is identified as the preferred alternative. This allows for the immediate activation of an emergency cut-off switch if an incident occurs which requires the cessation of fuel delivery.

The hypothetical alternative of no driver being present has been identified and excluded as too risky from a health, safety and environmental perspective. Therefore no

comparative assessment of use of emergency fuel delivery cut-off will take place as part of the alternatives assessment of this project.

Emergency response plan:

The best practice operational alternative identified and investigated includes an emergency response plan, which will be followed in the event of a spill. The alternative of operating without a response plan in place has been assessed and it has been ascertained that the health, safety and environmental risks are greater due to a slower response and remediation time. Therefore no comparative assessment of operating with an emergency response plan versus without an emergency response plan will take place as part of the alternatives assessment of this project.

Convenience store

The following water and energy efficiency technology measures have been identified as best practice and have been chosen in order to minimise resource use. Therefore, no comparative assessment of “standard” versus “best practice” energy and water efficiency technologies will take place as part of the alternatives assessment of this project.

Water use minimisation:

Low flow taps will be installed for all basins and sinks in the shop and ablution facilities as opposed to standard fixtures which allow a greater amount of water to be used during washing activities. Auto-stop taps will be installed in the ablution facility, which will significantly reduce the amount of water utilised during a hand washing session.

(f) The option of not implementing the activity.

The No Go Alternative means “the option of not implementing the activity”, or maintaining the status quo at the site. In terms of the No Go Alternative, the site of the proposed service station would not be established. The challenge is that vehicles around the area must travel to Mahikeng town for refueling; which could serve as a disadvantage to the motorists/customers.

Should this option be considered the following would be applicable:

- Negative impacts associated with the No Go Alternative include:
- No capital investment arising from the development would result.
- There would be no temporary or permanent employment opportunities created, with the associated economic and social upliftment and skills transfer, during the installation of tanks and operational phases of the development.
- Positive impacts associated with the No-Go Alternative include:
- No negative impacts on fuel sales volumes at surrounding service stations.
- The No-Go Alternative is thus not the preferred alternative for this application.

Should DEDECT decline the application, the No-Go ‘option will be followed and the status quo of the filling station will remain.

SECTION D: PUBLIC PARTICIPATION

- ii) Details of the Public Participation Process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;

1. ADVERTISEMENT AND NOTICE

Publication name	"Mafikeng Mail" - North West Newspaper	
Date published	04 th of March 2021	
Site notice position	Latitude	Longitude
	25° 29' 31.01"S	25°59' 28.85"E
Date placed	15 March 2021	

- (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;

Summary of main issues raised by I&APs	Summary of response from EAP
<p>From: Ntsimbi Sizathu <ntsimbigc@gmail.com> Date: Thu, Apr 1, 2021 at 3:07 AM Subject: Filling station at Moletsamongwe village To: lesedibonokwane@gmail.com <lesedibonokwane@gmail.com></p> <p>I personally think a filling station would do well on that location concerning the fact that it will be the only one on that side. I passes the site twice a day and is tired of looking at weeds on a good open space for a good business. That corner is a gateway to our portion, especially for people coming to Mafikeng. Some are local people having to travel 30-40km just to refill. Some travel even more than that because there is no other gas station on that road.</p>	<p>✓ Noted</p>

- (iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

* **Geographical attributes**

The proposed site is located in Moletsamongwe village, where there is no a single filling station. The nearest service station is approximately 8 to 10km away which is inconvenient for local motorists. The proposed site does not have any service provision from the municipality; the applicant will have to provide services such as water, storm water management system and sewerage system etc.

* **Physical attributes**

The proposed site is approximately 8 000m². The site was previously used for animal grazing and no red data species were observed on site.

* **Social and economic attributes**

The Mahikeng Local Municipality's IDP classified most of rural areas of the municipality as poor; it is therefore important that the service station be authorised to offer job opportunities (both temporary and permanent) in the area. The positioning of the service station will also provide convenience and cost saving measures to motorists to refill nearer to their area.

* **Heritage and cultural attributes**

The proposed site is already disturbed and there is no graves or any heritage important' aspects nearby. It is expected should the construction of underground tanks identifies any cultural or heritage aspect of significance, the process must be ceased and the relevant Department of Sports and Culture and SARHA be informed.

- (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;

The risks and impacts as identified for this project are identified and addressed on Table 7-10 (Impacts associated with Planning Phase); Table 11-18 (Impacts associated with Construction Phase); and impacts associated with Operational

METHODOLOGY USED TO DETERMINE THE ASPECTS AND POTENTIAL IMPACTS

- (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;

1.1 Significance Assessment

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these since their importance in the rating scale is very relative. For example, if 60 ha of a grassland type are destroyed the impact would be **VERY HIGH** if only 100 ha of that grassland type were known. The impact would be **VERY LOW** if the grassland type was common. A more detailed description of the impact significance rating scale is given in Table 1 below.

Table 1: Description of the significance rating scale

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

1.2. Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in Table 2.

Table 2: Description of the spatial rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact
4	Regional/Provincial	The spatial scale is moderate within the bounds of impacts possible, and will be felt at a regional scale (District Municipality to Provincial Level). The impact will affect an area up to 50 km from the proposed corridor.
3	Local	The impact will affect an area up to 5 km from the proposed corridor.
2	Study Area	The impact will affect a route corridor not exceeding the boundary of the corridor.
1	Isolated sites / proposed corridor	The impact will affect an area no bigger than the corridor.

1.3. Duration Scale

In order to accurately describe the impact it is necessary to understand the duration and persistence of an impact in the environment. The temporal scale is rated according to criteria set out in Table 3.

Table 3: Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium term	The environmental impact identified will operate for the duration of life of the project.
4	Long term	The environmental impact identified will operate beyond the life of operation.
5	Permanent	The environmental impact will be permanent.

1.4 Degree of Probability

The probability or likelihood of an impact occurring is described as shown in Table 4 below.

Table 4: Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very Likely
5	It's going to happen / has occurred

1.5. Degree of Certainty

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale is used as discussed in Table 5. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 5: Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact

	occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

1.6. Determining the impact rating

Once the factors had been ranked for each impact, the environmental significance of each impact could be assessed by applying the Significance Points (SP) formula. The SP formula can be described as:

$$SP = (\text{significance} + \text{duration} + \text{extent}) \times \text{probability}$$

The maximum value of SP is 100. Environmental effects could therefore be rated as either very high (VH), high (H), moderate (M), low (L) or very low (VL) significance.

Table below indicates the specific values and colour coding associated with significance rating.

Table 6: Specific values and colour coding associated with significance rating.

Significance Rating	Value (SP)	Color-code
Very low	0-20	
Low	20-30	
Moderate	30-60	
High	60-80	
Very high	80-100	

The tables below describe the impacts per activity, considering construction, operational, decommissioning and closure phases. These impacts have been rated prior to the application of mitigation measures and were then re-rated after mitigation is implemented.

1.7. Mitigation

In assessing the significance of an impact, natural and existing mitigation is taken into account. Natural and existing mitigation measures are defined as natural conditions, conditions inherent to the development design and existing management measures that alleviate impacts.

The significance of impacts is assessed taking into account any mitigation measures that are proposed. An Environmental Management Programme EMPr (**Appendix J**), specifying the methods and procedures for managing the environmental impacts of the proposed development, during all phases has been compiled and will be submitted to the Competent Authority following the final review period. Once approved this EMPr becomes a legal document that must be adhered to by the contractor.

- (vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

The positive impact on the socio-economic conditions of the area is that, more employment will be created and fuel will be available in the nearby community. The development will not affect other service stations negatively as there is only one on the R49 Road via Mahikeng Airport Road. The environmental condition of the area will not be affected in that, the filling station will be situated in an area that is already disturbed as it is temporarily used as a communal grazing and there are already few developments existing on the area. Since there will be no vegetation clearance, trees will be planted to avoid soil erosion.

(viii) The possible mitigation measures that could be applied and level of residual risk;

Mitigation measures are detailed in respects to the corresponding impacts are addressed in K below.

(ix) The outcome of the site selection matrix;

The site is within an existing road (R49) Bray Road and the access gravel road. Though there are no municipal services available; the electricity line passes over the proposed site, the geohydrological study recommends the use of the borehole water as of good quality. The applicant will develop the septic tanks or any measure recommended by the Department in order to manage sewerage. Domestic waste will be sorted on site and the contractor to collect and dispose waste will be appointed.

(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and

Alternatives were investigated, including the site/location as the development is suitably placed next to the R49 Bray Road and there are no service stations nearby.

(xi) Concluding statement indicating the preferred alternatives, including preferred location of the activity;

The site is within an existing road (R49) Bray Road and the access gravel road. Though there are no municipal services available; the electricity line passes over the proposed site, the geohydrological study recommends the use of the borehole water as of good quality. The applicant will develop the septic tanks or any measure recommended by the Department in order to manage sewerage. Domestic waste will be sorted on site and the contractor to collect and dispose waste will be appointed.

(j) A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including—

(i) A description of all environmental issues and risks that were identified during the environmental impact assessment process.

All environmental issues and risks/impacts are detailed in K below.

- (iii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;

An assessment of each issues and risks are addressed and indicated in details in K below.

- (k) An assessment of each identified potentially significant impact and risk, including—
 (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk;(iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided managed or mitigated.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES.

1.1 IMPACTS THAT MAY RESULT IN PLANNING AND DESIGN PHASE

Table 7: Project contract and programme:

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Contingencies for minimising negative impacts anticipated to occur during the Construction phase. Ensure environmental awareness and formalise environmental responsibilities and implementation
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – once all the plans, permits, authorisation are granted, adherence to the conditions will minimize the impacts.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Installation of the tanks must not commence before the plans of the premises and associated specifications have been approved. Compliance should be ensured to the specification for underground and aboveground tanks as imposed by the South African National Standard (SANS) 10 089 The Petroleum Industry. • Any new services system must be designed according to the minimum requirements of the Mahikeng Local Municipality, relevant by-laws and DWA's minimum requirements. • The Environmental conditions specified in the Environmental Authorisations must be adhered and complied to at all times.

	<ul style="list-style-type: none"> The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. The developer/owner of the filling station must provide all contractors with a copy of the EMPr. A copy of the Draft EMPr (authorised by the Competent Authority) must be available on site. The Contractor must ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the EMPr.
Objective of mitigatory measures	Ensure all permits/licenses, authorisations, contracts and authorisations are in place
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 8: Ensure the availability of services:

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Inability to provide all the services required could lead to detrimental to the environment
Extent and duration of impact:	Local extent: Regional. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – the study indicated that the groundwater is suitable for use and the applicant will appoint the contractor to collect domestic waste. The electrical supply is close by and other services will be procured prior to the operation of the service station.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	The site has no municipal connections for water, sewerage, electricity and waste collection services. Services will be procured and the generator backup for electricity and jojo tanks for water will be constructed/installed.
Objective of mitigatory measures	Ensure availability of services required by this development (the applicant must ensure that there is enough capacity for this project; though nothing changes in terms of the footprint and service requirement of this project).
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation(Low, Medium, Medium-High, High, or Very-High)	Low

Table 9: Appointments and duties of project team

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Failure to provided and appoint relevant professional, namely ECO, managers etc. will result in the project operating minimally and increasing negative impacts in the area.
Extent and duration of impact:	Local extent: Regional. Duration: Medium Term.

Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – as the applicant may need to appoint contractor, who in turn will appoint professional individuals to ensure that they comply with the measures of tank’s installations.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • The Developer/owner must appoint an independent Environmental Control Officer (ECO) who must monitors the contractor’s compliance with the EMPr. • The contact details for the ECO must be completed on the attached pro-forma and a copy kept on site. This document must be made available to the approving authority on request. • The developer/owner must appoint an Environmental Site Officer (ESO) for Construction. This person will be required to monitor the situation with a direct hands-on approach, and ensure compliance and co-operation of all personnel. He must be fluent in the languages of the employees. • Before construction/expansion/replacement of tanks commences, role players must have a clear indication of to their role in the implementation of the attached EMPr as indicated in the report. • Subcontractor(s) contracts with the principle contractor must contain a clause to the effect that the disposal of all construction-generated refuse/waste (both domestic and hazardous) to an officially approved landfill site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMPr. • The “declarations of understanding” on the EMPr must be signed prior to the commencement of construction. Signed declarations of understanding must form part of site documentation.
Objective of mitigatory measures	Appoint relevant and professional workers and train them
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 10: Unauthorized access to the site by workers.

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Potential harm to the environment due to workers or contractors being unaware of how their activities may impact the environment or due to unauthorized access to the site.
Extent and duration of impact:	Local extent: Local. Duration: Long Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – awareness, training and signage will minimize impact associated with unauthorized workers and security system will reverse the possible impact.
Cumulative impact prior to mitigation:	Medium

Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Appointed contractors should be required to implement security measures at construction camps/material laydown areas. Security gate control measures should be implemented in order that only labourers and authorised persons obtain access to the construction camps/material laydown areas. • The contractor is to ensure that all employees, including sub-contractors and their employees, are required to attend on-site Environmental Awareness Training prior to commencing work on site. • Follow-up Environmental Awareness Training may be required from time to time as new subcontractors or crews commence work or for specific activities that may potentially impact the environment, or if work is being undertaken in sensitive environments. • The contractor is to maintain accurate records of any training undertaken. • Training is to cover all aspects of the EMP, procedures to be followed, the sensitivity of the site and importance of adhering to “no-go” areas. • The ECO shall monitor the contractor’s compliance with the requirement to provide sufficient environmental awareness training to all site staff. • Environmental signage is to be displayed on the site including – “no smoking”, “fire hazards”, etc. • Emergency numbers are to be clearly displayed. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • All construction workers shall be transported to and from site on a daily basis. • Workers shall remain on the site at all times during the work day and may only will be allowed to leave site during break times. • Night watchmen are to be provided with adequate cooking and heating facilities (no open fires), a suitable method of disposing of wastewater, and access to communication equipment. • Access to fuel and other equipment stores is to be strictly controlled.
Objective of mitigatory measures	Ensure all workers accessing the site are well trained
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

1.1.1 INDIRECT IMPACTS			
Mushrooming of informal settlements	MEDIUM	The filling station will be located within the built up area and the chances of informal settlement mushrooming is non-existence. It is highly recommended that the contractor should employ “locals” only on jobs that does not require an intensive skill and the appointment must not be done at the site; rather use the local councillors to recruit from their wards.	LOW

High levels of crime and increased risk on security in the area	MEDIUM	The applicant will employ security guards at the development site. Individuals who are looking for employment will not be allowed to loiter around the site; any vacant position will be filled through the help of ward councillors.	LOW
Possible influx of job seekers	MEDIUM	It is recommended that the developer ONLY appoint non-skilled labourers from the local community to eliminate challenges of mushrooming of illegal settlement with the purpose of being close to their place of work. However, skilled labour is allowed to be sourced “outside” of the local area/municipality.	LOW
Increased chances of accidents and traffic congestion along the R49 (Bray Road from Mahikeng Via Airport Road) Road and connection to the site.	HIGH	The number of trucks and traffic along the R 49 will not be massively increased, in that, few trucks visits will only occur during the first week delivering tanks and possibly later disposing off existing tanks.	LOW

1.1.2 CUMULATIVE IMPACTS

Possible cumulative impacts in terms of more traffic, more services requirements etc.	LOW	No impacts are expected with the exception of an increase in the business potential of the area	LOW
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1.1.3 NO-GO IMPACTS

- No environmental impacts are foreseen if the no-go alternative is decided upon
- Loss of job opportunities associated with the construction phase.

1.2 IMPACTS ASSOCIATED WITH THE CONSTRUCTION/DECOMMISSIONING /REPLACEMENT OF TANKS AS PART OF EXPANSION OF FILLING STATION

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Table 11: Excavation for removing old tanks

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	The removal/excavation old tanks may result in: <ul style="list-style-type: none"> • Incorrect method of stockpiling and • Possible danger to the community/customers nearby.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – the tanks to be decommissioned are only 8 x 23 000 litres (ℓ) and due to their sizes; they may be easily removed without much force and efforts.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Topsoil and subsoil must be placed on opposite sides of the trench and must be kept separate throughout construction and rehabilitation. • Topsoil must not be stockpiled for an extensive period (> 3 months). This is to prevent the redundancy of the

	<p>existing seed bank as well as the alteration of the soil characteristics (permeability, bulk density etc.).</p> <ul style="list-style-type: none"> • Erect signs and/or danger tape around the exposed excavations to warn the public of the inherent dangers. • Trucks removing excavated material can cause compaction of soil if new pathways are created. Vehicles should, therefore, use existing roads. If the creation of new roads is unavoidable, these temporary roads should be ripped and re-vegetated after use.
Objective of mitigatory measures	Ensure that the decommissioning of tanks does not result in environmental damage and unnecessary noise
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium

Table 12: Installation of Underground Storage Tanks and monitoring system:

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	The underground storage tanks must be commissioned in a way that: <ul style="list-style-type: none"> • The regulations are complied with and • The tanks are without leakages and readily monitored.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely – the project is to install underground tanks complying with the guidelines and conditions for both EA and EMPr.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • The USTs must comply with the relevant SANS/SABS Codes of Practice which include: <ul style="list-style-type: none"> ○ SANS 10400 TT 53 (Sections 1-6) ○ SANS 10131 ○ SANS 10108 ○ SANS 11535 SANS 10089 Parts 2 & 3 which requires: <ul style="list-style-type: none"> ○ The installation of a leak detection system including observation and monitoring wells situated around the tank to facilitate early warning that a leak has arisen. ○ The provision of a plastic sheet below the tank that slopes towards an observation well. ○ Installation of leak detectors on the pressure systems. • The installation must comply with local authority bylaws. • The Underground Storage Tanks must be fitted with an overflow protection device. • The tanks must be designed so as to reduce the risk of soil and groundwater contamination. • The Underground Storage Tanks must be dipped

	<p>daily and reconciled against volume to check for losses due to leakage.</p> <ul style="list-style-type: none"> • The condition of the tanks, associated piping and the monitoring wells must be inspected on a regular basis. • The tanks and product lines must be pressure tested prior to commissioning. • A groundwater monitoring plan must also be submitted for approval to the Department of Water and Sanitation. • Spillages occurring at the filler point and dispensing (i.e. offloading) area must be contained and cleaned up. Any water containing waste (wastewater) generated as a result of the spillage and associated clean up, must be disposed of safely and in accordance with environmental legislation. No product must be allowed to be discharged into municipal storm water / sewer system and or surrounding environment. • A Spill Contingency or Emergency Response Plan must be drawn up and should include the following actions that need to be taken into account in the event of a spill: <ul style="list-style-type: none"> Stop the source of the spill; <ul style="list-style-type: none"> ○ Contain the spill; ○ Report the spill to the Site Manager. Note that all significant spills must be reported by the Site Manager to the Department of Water and Sanitation (DWS), DEDECT, and the ECO; ○ Remove the spilled product for treatment or authorised disposal; ○ In the case of a minor spillage clean the affected area and drum all contaminated material for temporary storage until the waste can be collected and disposed of by a registered hazardous waste disposal contractor. In the case of a significant spillage the DEDECT and DWS will advise on appropriate emergency action protocol to be followed for the type of spillage; ○ The Site Manager is to determine in conjunction with the ECO if there is any soil, groundwater or other environmental impact; ○ If deemed necessary by the DEDECT, DWS or the ECO, remedial follow-up action must be taken; ○ The incident and remedial action taken must be documented by the Site Manager and kept on file for reference purposes. If necessary, remedial action must be taken in consultation with Department of Water and Sanitation and the Department of Environmental Affairs; ○ Compliance with relevant legislative and municipal requirements in terms of health and safety must be ensured; and ○ A mass balance of products in and out must be prepared.
Objective of mitigatory measures	Ensure that the installation of tanks does not result in environmental damage.
Cumulative impact post mitigation:	Medium

Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
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Table 13: Noise and Vibration

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Decommissioning (tanks) activities which are likely to be noisy include: <ul style="list-style-type: none"> • Use of jackhammers to break concrete to access the underground tanks; • Movement of vehicles in and around the site and operation of a crane; • Dismantling above ground pumps, signage and underground storage tanks and pipelines. These activities will only be undertaken during day time and will last for approximately 2 weeks.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Keep residents of surrounding properties informed if any unusually noisy activities are planned. Noise impacts are reduced over distance at a rate of 1db (decibel) per 13 metres. Working hours should be limited to between 06h00 and 17h00(Mondays to Saturdays only). • Surrounding business and residential areas to be informed of the timeframe for decommissioning of tanks, especially the underground tanks. • Decommissioning activities to occur during day time hours only i.e. 08:00 -17:00; • Contractors to be conscious of the noise generated during their decommissioning activities, and to limit excessive noise generation where possible.
Objective of mitigatory measures	Ensure that the decommissioning of tanks does not result in environmental damage and unnecessary noise
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium

Table 14: Solid Waste – hazardous waste

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> • General waste from contractors' wills be generated during construction phase. This will not be significantly greater than the amount currently generated at the site. • An independent contractor will collect and dispose of general waste at the Mahikeng landfill site.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium

Degree to which the impact may cause irreplaceable loss of resources:	Unlikely–hazardous waste collecting company will ensure the hazardous substances are removed in a proper and safe way and disposed off as required by law.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • The contractor must ensure that activities meet the requirements of the EMPr in terms of the disposal of solid and hazardous waste. • Record of waste must be kept on site and provided once required by authorities (municipality, competent authorities etc.).
Objective of mitigatory measures	Ensure that waste is properly managed and does not result in environmental damage.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 15: Solid Waste – Contaminated /polluted land

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	It is possible that soil may be contaminated at the site, during the operation of the service station. It is unlikely that the contamination will be significant as the conditions of both the EA and EMPr are complied with.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Any contaminated soil removed from the site will be taken to a registered landfill by the hazardous waste collection company/Enviroserv.
Objective of mitigatory measures	Ensure that waste is properly managed and does not result in environmental damage.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 16: Occupational health and safety

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Impacts could include: <ul style="list-style-type: none"> • Slips and falls from poor housekeeping during installations of tanks; • Exposure to hazardous materials during the installation of the tanks, fuel pumps and pipelines.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.

Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely—the best housekeeping measures and training would have taken place prior to the commencement of operation of the service station. Proper gear (Protective clothing) would have to be provided to all workers with clear badges and reflective.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Contractor/owner/Health and Safety Officer will implement their health and safety plan and ensure that all personnel working on the site have had the adequate health and safety training. • Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations. • All structures that are vulnerable to high winds must be secured (including scaffolds and toilets). • All manhole openings are to be covered and clearly demarcated with danger tape. • Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. • The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads. • Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA). • An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and relevant occupational health and safety issues. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • Access to fuel and other equipment stores is to be strictly controlled. • No unauthorized firearms are permitted on site. • Emergency procedures must be produced and communicated to all the employees on site. These will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided.

	<ul style="list-style-type: none"> • Adequate emergency facilities must be provided for the treatment of any emergency on the site. • The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times. • The Contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses. <p>Hygiene</p> <ul style="list-style-type: none"> • The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas. • Washing and toilet facilities shall be provided on site and in the Contractors camp. • Adequate numbers of chemical toilets or ablution facilities must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided. • The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. • The chemical toilets must be emptied on a regular basis. • The chemical toilets must be sited taking into account the possibility of the prevailing wind unfavorably dispersing unpleasant odours. • The Contractor's site must be located on the high side of the site so any leakages or spillages will be contained on site. • Tick repellent must also be provided (Bayticol is available from certain pharmacies and should be sprayed on the clothing in contact with grass, etc.). • HIV AIDS awareness and education should be undertaken by all Contractor staff. • Care should be taken to adequately drain areas surrounding water points in order to avoid the development of pools of standing water, as these tend to be a breeding source of flies, mosquitoes and other vectors.
Objective of mitigatory measures	Ensure that all workers are well trained on matters on health and safety.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 17: Community Health and Safety

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Access to the site during installation of tanks must be restricted to:

	<ul style="list-style-type: none"> • prevent the public accessing the site; • No loss of employment as the workers will be retained after the expansion of the filling station.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely– the signage placed on site will direct the public on the area that is accessible and those that are not.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Working areas must be cordoned off to restrict public access. • Machinery and cranes should be restricted to the working areas only. • Construction vehicles must only operate during working hours, and where possible will avoid peak traffic times.
Objective of mitigatory measures	Ensure that public members are restricted from the working area.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 18: Air quality

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Possible dust emissions during the construction of the service station/ installation of the underground tanks.
Extent and duration of impact:	Local extent: Local. Duration: Medium Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Dust suppression methods, such as wetting or laying straw, should be applied where there are large tracks of exposed surfaces. • Stockpiles and soil heaps must be covered with tarpaulins or straw to prevent fugitive dust. • All construction vehicles must be appropriately maintained to minimise exhaust emissions
Objective of mitigatory measures	Ensure that dust emissions are limited.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

1.2.1 CUMULATIVE IMPACTS			
<ul style="list-style-type: none"> The duration of the construction of the service station is only a four months period, it is unlikely that any cumulative impacts would have a significant impact on the surrounding community. An increase in heavy load transport in an already relatively busy area could pose a problem. Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate surface water. 	LOW	<p>The cumulative impacts can be decreased significantly if the following are adhered to:</p> <ul style="list-style-type: none"> On-site filtration (Zorbit Grease Trap) and recycling mini-plant for forecourt runoff and for the fast food outlet. The accumulated grease and oil must be removed by an accredited company. Construction takes place during the dry months of the year. Storm water infiltration decrease storm water runoff. <p>The installation of the Underground Storage Tanks follows SABS specifications:</p> <ul style="list-style-type: none"> SANS 10 089, 11 535 & 10 131 (Installation) SANS 10 108 (Hazardous locations & apparatus) SANS10 040 (Building Regulations) 	LOW
1.2.3 NO-GO IMPACTS			
<ul style="list-style-type: none"> No environmental impacts are foreseen if the no-go alternative is decided upon The site would end up as a dumping site by the community and the possibility of job opportunities will be lost. 			

1.3 IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE EXPANSION OF FILLING STATION

Table 19: Soil and Groundwater Contamination

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> There is potential for soil and/ or groundwater contamination during the operation phase, as a result of accidental spills or leaks from the underground fuel storage and handling infrastructure, including pipework and underground storage tanks. Contamination could furthermore arise as a result of the spillage of hazardous substances, inappropriate responses to hazardous spills, improper waste handling, storage and disposal, and the failure of the effluent management system or stormwater management system.
Extent and duration of impact:	Local extent: Regional. Duration: Long Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely– the installation of tanks must be done by professionally trained individuals and follow proper guidelines on “the installation of the Underground Storage Tanks must follow the SANS 10089, SANS 11535 and SANS10731”.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High

Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Sanitation facilities should be well maintained and serviced, any breakages or leaks should be fixed immediately to prevent loss of containment. • Stormwater management from the forecourt area should be designed to collect all runoff which should pass through an oil/water separator prior to being discharged. • As a first response, emergency spill kits on site are a necessity for handling any minor spills that may impact on the water resources for emergency response to any surface spills. • Refuse handling areas should be confined to concrete lined facilities that are covered to prevent ingress of rainfall. • Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act, 1998 and the National Water Act, 1998. • Fuel dispenser pumps must be located on a hardened surface to contain spillages. • The accumulated contents of the oil/water separator must be removed by an accredited company. • The oil/water separator must be inspected regularly to ensure that it is functioning at all times. • Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. • Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch. • In the event of the pump dispenser or the hoses being knocked over or ripped off, the fuel supply must be cut off by shear-off valves. • All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing. • The storage tanks, pipelines and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity. • A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the storage tanks. • An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers. • If contamination or leakage is detected, this Emergency Response Plan must be followed. • Following a leak or accidental spill, a remediation plan must be compiled and executed. • Accidental spills that may occur on the forecourt must be cleaned up immediately using a spill absorbent, which must then be removed by a licensed contractor. • Fuel stock must be monitored on a daily basis and these records must be kept on site. • Aboveground Storage Tanks (ASTs) must have corrosion protection and secondary containment. • Bunded walls must be installed within the storage tanks containment area, at all four corners of the containment area. These walls must be inspected on a monthly basis so that leaks can be detected early. • The forecourt must have an impervious surface, such

	<p>that fuel and oil products will not leak into the soil or groundwater below the forecourt.</p> <ul style="list-style-type: none"> • An appropriate storm water management system must be included in the final site layout. The design must ensure that all runoff from the forecourt is directed into the storm water management system, which must direct runoff into an oil/water separator and then into the wastewater treatment system established for the R 49/ Bray Road, prior to being released to the environment. • All pipework will be double walled and comply with SANS 62- 1 and 2, SANS 1132 (pipework). • The storage tank installation must comply with SANS 10089 part 1 (storage of dangerous goods in storage tanks). • Monitoring of the quality of groundwater should be undertaken on a regular basis. The results of this monitoring should be compared against the baseline quality conditions. If any contamination is detected, immediate steps must be taken to locate the source of the contamination and to correct it. Until such time as the water is safe for consumption, an alternate water supply will need to be provided for the local community.
Objective of mitigatory measures	Ensure that possible leakages and spillages are attended with immediate effect.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 20: Air Quality Impacts

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> • Impacts on air quality will arise due to exhaust fumes from motor vehicles, emissions from vent pipes and the release of VOCs during fuel transfer. • The VOCs released during fuel transfer and from vents will dissipate into the atmosphere shortly after being released and are not likely to travel to the surrounding areas.
Extent and duration of impact:	Local extent: Regional. Duration: Long Term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely–SANS standards adequately address various potential air quality impacts via the implementation of required engineering measures.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • The storage tanks must be designed and installed in accordance with the SABS 089-3-1999, Third Edition. Code of practice - The petroleum industry, Part 3: The installation of storage tanks, pumps/dispensers and pipework at service station and consumer installations). SANS standards adequately address various potential air quality impacts via the implementation of required

	<p>engineering measures.</p> <ul style="list-style-type: none"> • Vent pipes are to be fitted such that they face away from neighbouring residential areas. • All fuel delivery vehicles must be adequately maintained to reduce exhaust emissions.
Objective of mitigatory measures	Ensure that proper measures are in place in compliance to standards and guidelines on installations and operation of service station.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 21: Noise Impacts

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	During operation, the noises that may be associated with the service station may include music broadcast over speakers in the forecourt, staff talking amongst one another, and vehicles revving as they leave the service station.
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Likely
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely—noise levels will be strictly controlled, including of customers and staff.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • A grievance procedure will be established whereby noise complaints can be received, recorded and responded to appropriately. • Equipment such as mechanical equipment, extraction fans, refrigerators that are fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly. • Noise levels should comply with the SANS Code of Practice 100103 – 0994 (recommended noise levels). Local by-laws for noise levels must be adhered to.
Objective of mitigatory measures	Ensure that proper measures are in place to effectively address issues of noise from customers and staff.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 22: Health and Safety

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Petroleum and diesel fuel are considered dangerous substances as they are volatile and could potentially ignite under specific circumstances. Therefore, there is a risk of fire or explosions on site, which would pose a threat to on-site employees and surrounding land users and occupiers.
Extent and duration of impact:	Local extent: Local. Duration: Short Term.
Probability of occurrence:	Likely

Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely—Staff must be trained adequately so as to identify potential high risk situations and implement the Emergency Response Plan and Health and Safety measures
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Fire extinguishers and sand bags must be readily available onsite and easily accessible. • Firefighting equipment must comply with SANS 1151 (Portable rechargeable fire extinguishers - Halogenated hydrocarbon type extinguishers), and must be inspected regularly. • Appropriate health and safety signage must be displayed on site. • An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers. • No smoking may be permitted on site. • No cell phones may be used during fuel dispensing. • Staff must be trained adequately so as to identify potential high risk situations and implement the Emergency Response Plan. • Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. • The design and construction of the filling station must conform to the following fire safety standards and legislation. <ul style="list-style-type: none"> ▫ SANS 10089 (Building Code) ▫ Hazardous Substances Act (Act No. 15 of 1973). ▫ Occupational Health and Safety Act (Act No 85 of 1956). ▫ Fire Services Act (Act 99 of 1956) ▫ National Building Regulations (Act 103 of 1977). • The following signs must be installed in accordance with Mahikeng Local Municipality's Fire Department <ul style="list-style-type: none"> - "NO SMOKING" - "NO NAKED FLAME" - "NO CELLPHONES" • The UST's, underground pipes and dispensing pumps should be monitored regularly for leaks. • Staff must be trained adequately so as to identify and minimise the impacts of leaks and to deal with fires. • Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. • In the event of the pump dispenser or the hoses being knocked over or ripped off the fuel supply must be cut off by shear off valves. • Tanker delivery driver must be present during delivery of fuel with the emergency cut off switch and a fire extinguisher. • Fire-fighting facilities must conform to the oil industry standard and be regularly inspected. • The filling station management must develop an

	EMERGENCY PLAN. All staff must be adequately trained in the implementation of this plan.
Objective of mitigatory measures	Ensure that staff is properly trained to identify risks and implement correct measures on health and safety.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

1.4 IMPACTS ASSOCIATED WITH THE DECOMMISSIONING/CLOSURE PHASE OF THE EXPANSION OF FILLING STATION

Direct impacts:

While decommissioning is not anticipated, should this be required the relevant environmental laws prevailing at that point in time will be adhered to in terms of decommissioning requirements. Decommissioning will take place in consultation with and in receipt of confirmation from the relevant environmental authority.

Indirect impacts:

While decommissioning is not anticipated, should this be required the relevant environmental laws prevailing at that point in time will be adhered to in terms of decommissioning requirements. Decommissioning will take place in consultation with and in receipt of confirmation from the relevant environmental authority.

Cumulative impacts:

While decommissioning is not anticipated, should this be required the relevant environmental laws prevailing at that point in time will be adhered to in terms of decommissioning requirements. Decommissioning will take place in consultation with and in receipt of confirmation from the relevant environmental authority.

Table 22: Noise and Vibration

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Decommissioning activities which are likely to be noisy include: <ul style="list-style-type: none"> • Movement of vehicles in and around the site and operation of a crane; • Dismantling underground storage tanks and pipelines. These activities will only be undertaken during day time and will last for approximately 2 weeks.
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely—noise levels will be strictly confined to the site and controlled.
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be mitigated:	Moderate

Proposed mitigation:	<ul style="list-style-type: none"> Surrounding business and residential areas to be informed of the timeframe for decommissioning. Decommissioning activities to occur during day time hours only i.e. 08:00 -17:00; Contractors to be conscious of the noise generated during their decommissioning activities, and to limit excessive noise generation where possible.
Objective of mitigatory measures	Ensure that proper measures are in place to effectively address issues of noise and should be confined between 08:00-17h00.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 23: Air Quality (Dust)

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	Possible dust emissions during dismantling of the site.
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely– dust levels must be minimised by wetting the ground.
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be mitigated:	Moderate
Proposed mitigation:	Dust generated during decommissioning must be controlled by appropriate methods (e.g. by spraying water on dust generating areas).
Objective of mitigatory measures	Ensure that site is properly demarcated and spraying water to minimise dust on site.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 24: Solid Waste – Domestic and hazardous waste

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	General waste from contractors will be generated during decommissioning. This will not be significantly greater than the amount currently generated at the site. Municipality will collect and dispose of general waste, as is currently done. Underground storage tanks and pipelines, above ground pumps, and signage will be removed from the site during and need to be disposed of at a registered landfill site.
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely– proper measures of managing waste must be in place.
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate

Degree to which the impact can be mitigated:	Moderate
Proposed mitigation:	<ul style="list-style-type: none"> • All solid waste generated from the removal of the tanks must be handled according to the precautionary principle. This implies that waste (including soils, metals and other material) should be treated as hazardous unless proven otherwise. • All contaminated soil and other material must be disposed of at a permitted landfill site that is authorized to accept such wastes. • Waste must not be allowed to be stockpiled on site for extensive periods but must be disposed off as generated. • Any waste material temporarily stockpiled must be adequately protected from the environment to prevent leaching of potentially harmful contaminants. • An appointed ECO must ensure that Gofaone Security and Project Company (Pty) Ltd activities meet the requirements of the EMPr in terms of the disposal of solid waste. • Underground storage tanks will be emptied and made inert prior to removal. • Underground storage tanks and pipelines, above ground pumps, and signage will be disposed of at the registered Hazardous Waste landfill site by an approved company. • Any potentially hazardous material on site will be quarantined and disposed of at the registered hazardous waste landfill site by an approved company. Removal of the waste in this way will eliminate the possibility of further site contamination from the waste.
Objective of mitigatory measures	Ensure that waste is strictly managed and the proper, approved, registered hazardous waste company is used in disposing off such waste.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 25: Contaminated land/spillages

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> • Soil is potentially contaminated at the site, due to the operation of the service station. The level of contamination will only be understood following sampling during the removal of underground storage tanks and pipelines. • It is unlikely that significant spills will occur during the decommissioning of the site as the tanks and pipelines will be drained before removal and made inert. Spills from vehicles may however include fuel and other hydrocarbon liquids (e.g. gearbox oil and hydraulic fluid).
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely–It is unlikely that significant spills will occur during the decommissioning of the site as the tanks and pipelines will be drained before removal and made inert. Spills from vehicles may however include fuel and other hydrocarbon liquids (e.g. gearbox oil and hydraulic fluid).

Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be mitigated:	Moderate
Proposed mitigation:	<ul style="list-style-type: none"> • During removal of infrastructure, samples of soil in the immediate vicinity of the tanks must be assessed by an independent and qualified professional to ascertain potential contamination. • Any significantly contaminated soil on site must be remediated or removed to an appropriate registered landfill by approved, registered hazardous waste company. <p><u>Spillages</u></p> <ul style="list-style-type: none"> • Any spillages during the decommissioning of the tanks must be reported to this Department and other relevant authorities. <p><u>Remediation</u></p> <ul style="list-style-type: none"> • Clean-up or remediation of any contamination must be done in consultation with this Department. <p><u>Tank Closure</u></p> <ul style="list-style-type: none"> • A soil and groundwater contamination investigation must be conducted to determine the presence, nature and extent of any contamination. This will provide information as to the current status of the site in terms of the level of contamination, which will ultimately influence the level or type of remediation that needs to be undertaken, if any. • The soil and groundwater must be analysed for Benzene, Toluene, Ethyl benzene and Xylene (BTEX's) and for lead based fuel, if this was previously stored in the tank. • Prior to the tanks and associated piping being closed all residue products must be carefully removed for recycling or safe disposal. Safe disposal certificates must be obtained and kept on record as proof. • A solid inert material must be used for filling the underground storage tank. • Only clean soil must be used for backfilling purposes. <p><u>Stormwater & Wastewater Management</u></p> <ul style="list-style-type: none"> • Water used for flushing the pipes and tanks must be disposed off safely if it is not suitable for disposal via the sewer system. The relevant department at the Local Municipality must be contacted with regard to the discharge of water containing waste to the sewer system. • The water containing waste generated must pass through an oil/water separator prior to discharge to the municipal sewer system. • It must be ensured that any water containing waste does not contaminate clean stormwater. <p><u>General</u></p> <ul style="list-style-type: none"> • A proper sampling protocol must be followed. • In terms of Section 19 of the National Water Act, 1998 (Act 36 of 1998) and with regard to contamination and the remediation thereof, the owner of land, a person in control of land or a person who occupies or uses the land on which pollution has occurred, is not absolved from responsibility of any further and/or associated pollution arising from his property. Should there be a

	<p>risk to downstream users or the environment from this site in the future, the Department would request that further remedial measures be instituted at this site.</p> <ul style="list-style-type: none"> It must be noted that the National Environmental Management: Waste Act (Act 59 of 2008) was promulgated in 2008. <ul style="list-style-type: none"> Part 2 of Chapter 4 places a general duty on the holder of a waste. Part 8 of Chapter 4 deals with contaminated land. This Section has yet to come into effect. Draft norms and standards for the remediation of contaminated land and soil quality were gazetted in March 2012.
Objective of mitigatory measures	Ensure that waste is strictly managed and the proper, approved hazardous waste company is used in disposing off such waste.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 26: Occupational health and safety

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> Slips and falls from poor housekeeping during decommissioning; Injury from moving machinery, particularly waste trucks that will need to come on-site and using the crane to remove the underground storage tanks. Exposure to hazardous materials during the removal of the tanks, fuel pumps and pipelines
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely—good housekeeping measures will ensure health and safety for workers on site.
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be mitigated:	Moderate
Proposed mitigation:	<ul style="list-style-type: none"> Gofaone Security and Project Company (Pty) Ltd will implement their health and safety plan and ensure that all personnel working on the site have had the adequate health and safety training.
Objective of mitigatory measures	Ensure that all workers are well trained and safety officer is always available to ensure minimal injuries.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Table 27: Community Health and Safety

POTENTIAL IMPACTS:	PROPOSAL
Nature of impact:	<ul style="list-style-type: none"> Access to the site during decommissioning must be restricted to prevent the public accessing the site; The surrounding communities will not be inconvenienced by the closure of this service station as there are existing service stations located within 3km of

	this site.
Extent and duration of impact:	Local extent: Local. Duration: Short-term.
Probability of occurrence:	Definitely
Degree to which the impact can be reversed:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely– the site will be cordoned off and no member of the public/community will be able to access the site.
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be mitigated:	Moderate
Proposed mitigation:	<ul style="list-style-type: none"> • Vehicles used during decommissioning must only operate during working hours (08:00-17:00), and where possible will avoid peak traffic times. • The site will be cordoned off to ensure that no member of the community access the site.
Objective of mitigatory measures	Ensure that signs and boards indicating the closure of the site is visibly placed on site and the site is properly cordoned off.
Cumulative impact post mitigation:	Moderate
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

- (l) Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report.

The study commissioned for the geohydrological study due to the installation of underground tanks. The specialist study is attached as Appendix G.

- (m) An environmental impact statement which contains—(i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.

Alternative A (preferred alternative)		
PLANNING AND DESIGN PHASE		
Environmental Impacts		
Impacts	Without Mitigation	With Mitigation
Project contract and programme	Medium	Low
Ensure the availability of services	Medium	Low
Appointments and duties of project team	High	Low
Unauthorised access to the site by workers	High	Low
CONSTRUCTION OF SERVICE STATION/TANKS PHASE		
Excavation for removing old tanks	High	Medium

Installation of Underground Storage Tanks and monitoring system	High	Medium	
Noise and Vibration	High	Medium	
Solid Waste – hazardous waste	High	Low	
Solid Waste – Contaminated /polluted land	Medium	Low	
Occupational health and safety	Medium	Low	
Community Health and Safety	Medium	Low	
Air quality	Medium	Low	
OPERATIONAL PHASE			
Soil and Groundwater Contamination	High	Low	
Air Quality	Medium	Low	
Noise Impacts	Medium	Low	
Health and Safety	Medium	Low	
<p>The proposed project would result in limited negative impacts during the planning/design phase. The impact will vary during the construction phase; where it would mostly be Medium to Low, mainly on excavation, installation of underground tanks, noise and vibration and on hazardous waste (High-Medium). The mitigation measures will result in Low on occupational health and safety, community safety and air quality. The reason is that the filling station has been in operation and there is no additional footprint on the project.</p> <p>During the operational phase, the impacts relating to the contamination of the surrounding area (High-Low); air quality, noise impacts and health and safety (Medium-Low) significance, however through the implantation of the recommended mitigation measures these could be reduced to low significance.</p>			

Alternative B



Alternative C



No-go alternative (compulsory)

The No-Go alternative would result in the status quo continuing on the site. New employment opportunities would be lost both during the construction and operational phases and competition would not occur with existing nearby filling stations.

- (n) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;

The specialist's report could not identify any negative impacts associated with this project

- (o) Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;

No findings which are to be included as conditions of authorisation from both the specialists and the EAP.

- (p) A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed.

No assumptions, uncertainties and gaps in knowledge related to the assessment and mitigation measures as the SPECIALIST report was meant to address the possibilities of groundwater contaminations and the quality of potable water as the reliable source in the area.

- (q) A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.

In terms of Section 31 (m) of NEMA the environmental practitioner is required to provide an opinion as to whether the activity should or should not be authorised. The assessment process has shown that the proposed development will not have any detrimental impacts on the environment but will contribute to socioeconomic development in the area. The EIA has also assisted in the identification of essential mitigation measures that will mitigate the impacts associated with the activity to within acceptable levels. From a planning perspective, the development complies with the relevant plans and policies and is consistent with these plans.

According to the feasibility study conducted the following conclusions were drawn:

- **Visibility:** The site is located alongside a straight section of the R49-Bray Road from Mahikeng via Airport Road. With no natural obstructions or developments potentially impairing the visibility, the site is clearly visible to passing traffic. The visibility can thus be described as VERY GOOD;
- **Access:** The proposed access points are at R49Bray Road from Mahikeng via Airport Roads. These accesses are considered GOOD;
- **Trading Market:** The trading market is described as GOOD. The site is positioned to serve mainly the transit market along the R49 Road from Mahikeng via Airport Roads. The traffic along this route does however consist of a high percentage minibus taxis and trucks;
- **Competitor Stations:** There are no existing filling stations located near the proposed site. However, there is only nearby existing filling stations providing direct access of the R49, approximately 10 kilometres from the proposed site. The study site is thus rated GOOD in terms of opposition filling stations; and
- **Traffic Volumes:** The traffic volumes observed indicated that the subject site is currently exposed to high volumes of traffic; mainly delivery trucks and taxis. Exposure to traffic can thus be described as GOOD.

Considering the criteria discussed above, it can be concluded that the study site has GOOD trading potential.

In conclusion, BLK2 Environmental Solutions (Pty) Ltd is of the opinion that, based on socioeconomic and biophysical implications, the application as it is currently articulated in the proposal should be approved, provided the essential mitigation and monitoring measures are implemented.

RECOMMENDATIONS

Should the project be approved, it is recommended the following be considered. Where the recommendations are contrary to established standards, then those standards must be adopted.

1. USTs

The USTs will be composite tanks constructed of galvanised steel with fiberglass coating 2.35m in diameter, 5.5m long, which will be installed according to:

- relevant National Building Regulations; and
- SANS codes which include:
 - SANS 10089-3: The installation of the underground storage tanks pumps/dispensers and pipework at service stations and consumer installations;
 - SANS 10400:1987 with special emphasis on regulation TT53;
 - SANS 1020: The electrical components of free-standing power dispensing devices for flammable liquids;
 - SANS 10142-1: The wiring of premises Part 1: Low-voltage installations;
 - SANS 10108: The classification of hazardous locations and the selection of apparatus for use in such locations;
 - SANS 10131-2: Storage and handling of liquid fuel Part 2: Large consumer installation; and
 - SANS 10098-2: The lighting of certain specific areas of streets and highways.

2. Tank and pipe work installation

The tank installation must comply with the necessary SANS codes especially SANS 1535 and SANS 089-3. In particular the following are important to prevent ground water contamination:

- The tank installation must comply with the necessary SABS codes (especially SABS 089-3 referred to above as SANS 10089-3);
- All pipe work must be installed on non-cohesive drainage/bedding material in reverse graded trenches, to ensure that any lost product will migrate back to the UST;
- The base of the tank pit should be V-shaped and graded to a sump to allow collection of any hydrocarbon product leaking from filler and dip-point manholes;

- The tank must be lined with a heavy-duty HDPE liner or clay layer to prevent infiltration of product to the ground water should a leak/spill occur. It must be noted that this is especially important if bedrock is encountered during excavation activities;
- The void around the UST must be back filled with free-draining granular material to ensure that any product loss through the UST or ancillary pipe work will flow towards the low point;
- All filler and dip-point manholes must be properly sealed and regularly cleaned out to prevent accumulation of hydrocarbon product on these contaminant structures; and
- All pipelines must be fuel-grade HDPE piping with thermo-weld fittings.

2. Stormwater

- All surface spillages must be contained on site through channels and trenches, these must be diverted to an oil / water separator or sump of sufficient capacity;
- The forecourt will be concrete paved to prevent infiltration of fuel into the subsurface soils with surface runoff designed to flow towards a centralised collection point which is connected to an oil/water separator;
- The area around the filler points will be concreted and the drainage connected to the oil/water separator;
- The oil / water separator should be regularly checked and kept clean to prevent blockage and overflow.
- Any material collected must be disposed at an appropriately registered waste disposal site; and
- All accidental surface spills of oil or fuel must be contained on-site and diverted to the oil/water separator.

4. General

- All employees must be aware of the HSE policy and implementation thereof, in addition to the Emergency Plan, Environmental Management Programme and Operational Standards/Guideline;
- The filler point and tank must be fitted with overfill protection. The critical level should be such that a space remains in the tank to accommodate the delivery hose volume (2%);
- It is suggested there should be a specially designed sealed containment tank to collect spilled product from the filler point from which product can be removed;
- Monitoring of piping sump(s)/trench and other secondary containment low points by industry standard technology;
- The integrity of UST and pipelines must be tested through vacu-sonic and pressure testing at least once a year;
- During fuel tanker delivery, the tanker driver must be present at all times during product offloading;
- Regular product monitoring and reconciliation must be undertaken;
- It is advisable to pack grit/gravel around the piezometer to prevent ingress of fines and clogging of piezometer slots;
- The phreatic water surface (or water table surface) in the monitoring well(s) is to be checked regularly for free phase product, as a minimum on a quarterly basis;

- During the monitoring event, the wet stock reconciliation records must be scrutinized to ensure that the records are maintained and any discrepancies in product volume must be flagged for further investigation immediately;
- In the event of a suspected product loss, the UST and subsurface pipe work must be tested to identify problem areas. Problem areas should be isolated and shut down immediately and appropriate remedial action be implemented as soon as possible;
- All minor spills must be cleaned and a spill management procedure must be prepared to include procedures for spill clean-up, waste and waste water collection and disposal. Spill kits must be kept on site and staff must be trained to execute a spill management procedure;
- The food premises must comply with relevant regulations;
- An emergency preparedness procedure should be developed for the site; and
- If a significant spillage event occurs that cannot be contained on site, it is recommended that an assessment be performed to determine if remediation / rehabilitation may be required to prevent pollution of the watercourse.

(r) Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.

Five (5) years of the authorisation date

(s) An undertaking under oath or affirmation by the EAP in relation to (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and (v) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts.

SECTION F: AFFIRMATION BY EAP

I, **Philadelphia Lesedi Bonokwane** of **BLk2 Environmental Solutions (Pty) Ltd** declare that the information provided is correct and relevant to the activity/ project and that; the information was made available to interested and affected parties for their comments. All specialist (s) reports are relevant for the competent authority to make informed decision.



SIGNATURE OF EAP

12/05/2021
DATE

SECTION F: APPENDICES

(t) Any specific information that may be required by the competent authority; and (u) any other matters required in terms of section 24(4) (a) and (b) of the Act.

The following appendices must be attached:

Appendix A: A3 Locality Map

Appendix B: Layout Plan and Sensitivity Maps

Appendix C: Site Photographs

Appendix D: Facility illustration(s)

Appendix E: Confirmation of services by Municipality (servitude and infrastructure planning)

Appendix F: Details and expertise of Specialist and Declaration of Interest

Appendix G: Specialist reports (including terms of reference)

Appendix H: Impact Assessment

Appendix I: Public Participation Process

Appendix J: Environmental Management Programme (EMPr)

Appendix K: Details of EAP and expertise

Appendix L: Any other Information

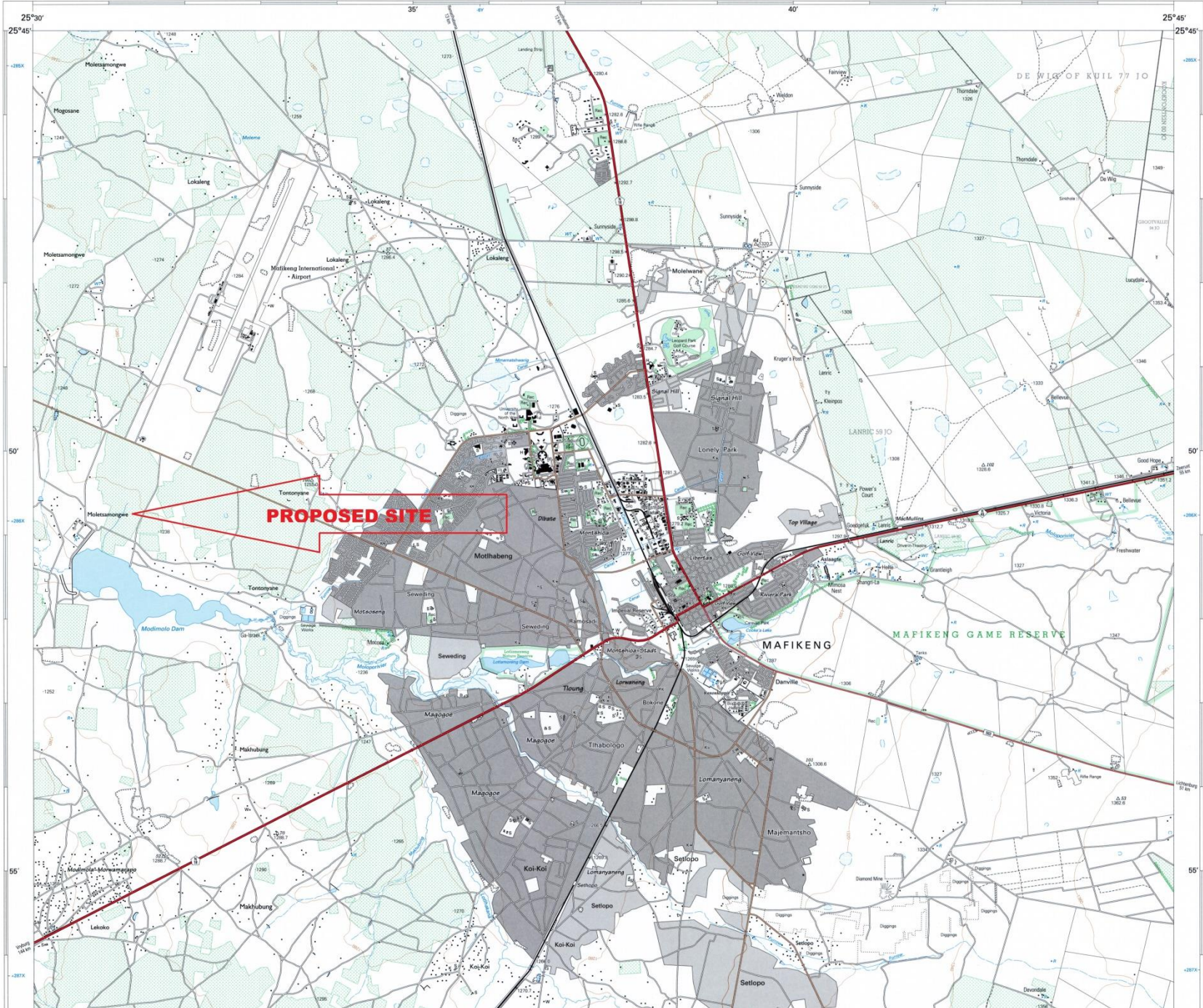
Appendix M: Financial Provision (if applicable)

Appendix N: Closure Plan (where applicable) as described in Appendix 5 of EIA Regulations, 2014

APPENDIX A: LOCALITY MAP

2525DC MAFIKENG

1:50 000 SOUTH AFRICA
SUID-AFRIKA



APPENDIX B: LAYOUT PLAN AND SENSITIVITY MAPS

APPENDIX C: SITE PHOTOGRAPHS



Picture 1: Eastern view from the filling station towards R49 Road, Bray Road from Mahikeng via Airport Road



Picture 2: Western view, site long the access gravel road the Bray Road



Picture 3: North-western view of the site



Picture 4: Southern view of the site



Picture 5:Eastern view of the site



Picture 6:Western view of the site

APPENDIX D: FACILITY ILLUSTRATION(S)

**APPENDIX E:
CONFIRMATION OF SERVICES BY MUNICIPALITY
(SERVITUDE AND INFRASTRUCTURE PLANNING)**

APPENDIX F: DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

**APPENDIX G:
SPECIALIST REPORTS (INCLUDING TERMS OF REFERENCE)**

APPENDIX H: IMPACT ASSESSMENT

PLANNING AND DESIGN PHASE		
Environmental Impacts		
Impacts	Without Mitigation	With Mitigation
Project contract and programme	Medium	Low
Ensure the availability of services	Medium	Low
Appointments and duties of project team	High	Low
Unauthorised access to the site by workers	High	Low
CONSTRUCTION PHASE		
Excavation for removing old tanks	High	Medium
Installation of Underground Storage Tanks and monitoring system	High	Medium
Noise and Vibration	High	Medium
Solid Waste – hazardous waste	High	Low
Solid Waste – Contaminated /polluted land	Medium	Low
Occupational health and safety	Medium	Low
Community Health and Safety	Medium	Low
Air quality	Medium	Low
OPERATIONAL PHASE		
Soil and Groundwater Contamination	High	Low
Air Quality	Medium	Low
Noise Impacts	Medium	Low
Health and Safety	Medium	Low

APPENDIX I: PUBLIC PARTICIPATION PROCESS

APPENDIX I (1): PROOF OF SITE NOTICE



Plate 1: Site notice at the entrance of a public school “Moletsamongwe Primary” at the proposed site.



Plate 2: Enlarged view of the site notice at the entrance of the convenience store at the proposed site



Plate 5: Site notice at the public accessible main road next to the site

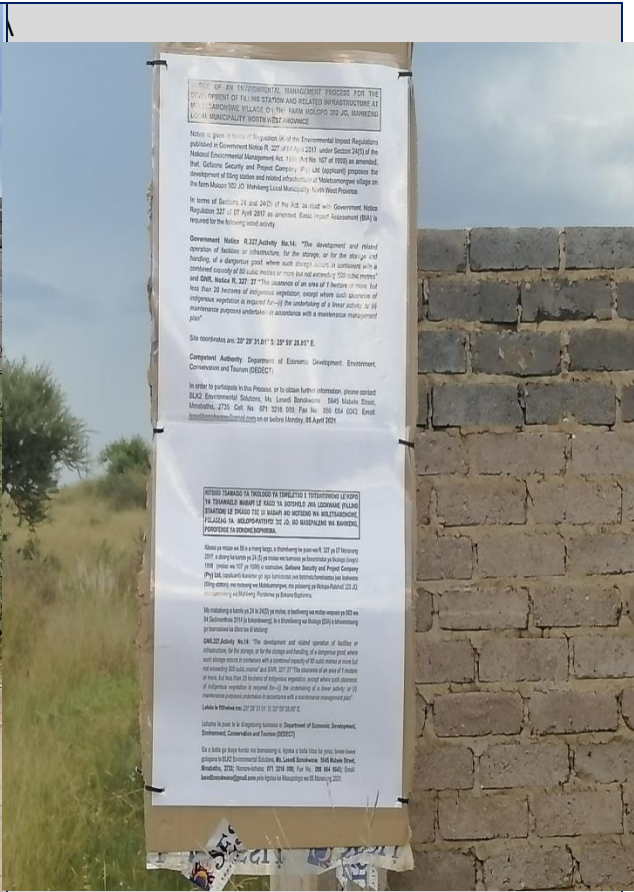


Plate 6: enlarged view of the notice at the public accessible main road next to the site

APPENDIX I (2) – WRITTEN NOTICES ISSUED AS REQUIRED IN TERMS OF THE REGULATIONS-BACKGROUND INFORMATION DOCUMENT

BACKGROUND INFORMATION DOCUMENT (BID) FOR THE PROPOSED DEVELOPMENT OF FILLING STATION AND RELATED INFRASTRUCTURE AT MOLETSAMONGWE VILLAGE ON THE FARM MOLOPO 302 JO, MAHIKENG LOCAL MUNICIPALITY, NORTH WEST PROVINCE



PREPARED BY:



BLK2 ENVIRONMENTAL SOLUTIONS (PTY) LTD

PREPARED FOR:

GOFAONE SECURITY AND PROJECT COMPANY (PTY) LTD

NOTICE AND OPPORTUNITY TO COMMENT ON THE BACKGROUND INFORMATION DOCUMENT FOR THE PROPOSED DEVELOPMENT OF FILLING STATION AND RELATED INFRASTRUCTURE AT MOLETSAMONGWE VILLAGE ON THE FARM MOLOPO 302 JO, MAHIKENG LOCAL MUNICIPALITY, NORTH WEST PROVINCE

Dear Interested and Affected Parties (I&AP's) and Stakeholders

<p>AIM OF THIS DOCUMENT</p> <p>The aim of this Background Information Document (BID) is to provide people affected by and interested in the proposed project with information about this project, the process being followed and to provide them with an opportunity to be involved in the Environmental Impact Assessment (EIA) Application process.</p> <p>Interested and Affected Parties (IAP's) may raise issues of concern; these along with potential environmental, social and economic impacts will be examined in the EIA process.</p> <p>The findings of the EIA will be provided to DEDECT for final decision making as to whether or not the project will go ahead and in what form.</p> <p>Your comments should be submitted on or before Monday 05 April 2021 on the information below:</p> <p>Return address for comments:</p> <p>BLK2 Environmental Solutions Ms. Lesedi Bonokwane 5645 Mabele Street, Mmabatho, 2735 Cell. No.: 071 3216 088 Fax No.: 086 664 6043 Email: lesedibonokwane@gmail.com</p>	<p>1. BACKGROUND AND PROJECT INFORMATION</p> <p>Gofaone Security and Project Company (Pty) Ltd has appointed BLK2 Environmental Solutions to submit and apply for the proposed development of filling station and related infrastructure at Moletsamongwe village on the farm Molopo 302 JO, Mahikeng Local Municipality, North West Province.</p> <p>The proposed development triggers the need for Basic Impact Assessment in terms of the following listed activities under the NEMA EIA Regulations GNR 327 of 07 April 2017. The triggered listed activity is as follows:</p> <p>Government Notice R.327, Activity No.14: <i>“The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres”</i> and GNR. 327: 27 <i>“The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan”.</i></p> <p>2. SITE LOCATION</p> <p>The proposed development of a filling station is located on the farm Molopo 302 JO in a village known as Moletsamongwe within the Mahikeng Local Municipality, North West Province. The geographical location/co-ordinate is: 25° 49' 26.99" S; 25° 30' 12.22" E. The aerial figure below shows the location and the surrounding land use:</p>
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3. PROJECT DESCRIPTION

The proposed development of a filling station will entail the following:

- 8 tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (combined storage capacity 184 cubic metres).
- Four posted canopy;
- Four pump islands in forecourt able to service a maximum of eight vehicles concurrently
- Develop a convenience store
- fast food outlet,
- ATM, and
- generator (power for backup),
- Develop access/egress points, and provide a hardened surface and parking facilities.
- Construct an ablution facility that will drain in a proposed septic tank.
- Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
- Site storm water drainage linking to municipal storm water drain.

3.1 Access Road

There is existing access roads (connecting from the Bray Road; Mahikeng-Airport Road) close to the site, therefore; there will be no need for a new road construction.

3.2 Water Provision

There are no municipal services connected to the site. The development will utilize borehole water which is yet to be applied and installed.

3.3. Electricity

There is an existing Eskom power connection on site and a generator backup to assist during the period of load shedding.

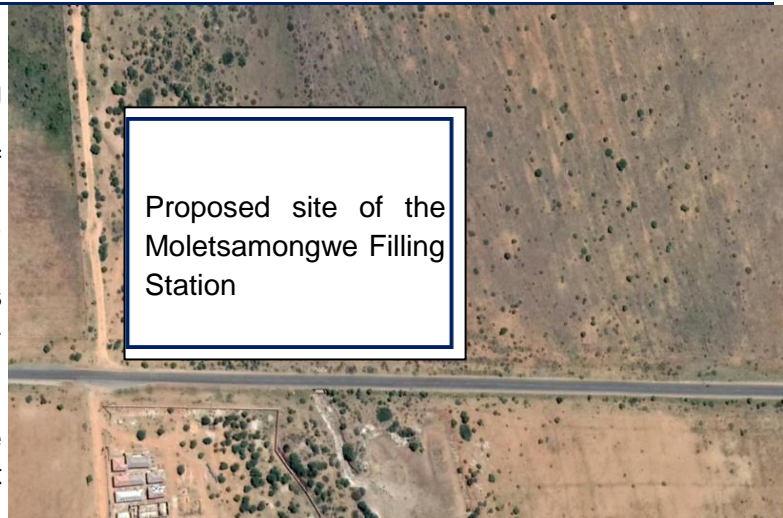


Figure 1: Aerial view of the proposed site (along Bray Road)

4. SITE PHOTOGRAPHS

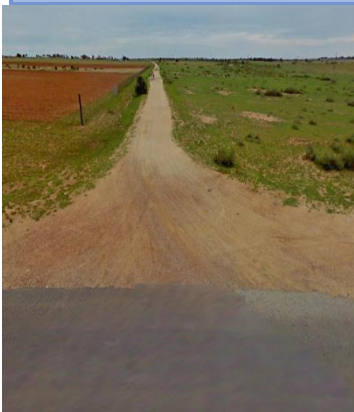
The photographs below show the proposed site and the surrounding land uses.



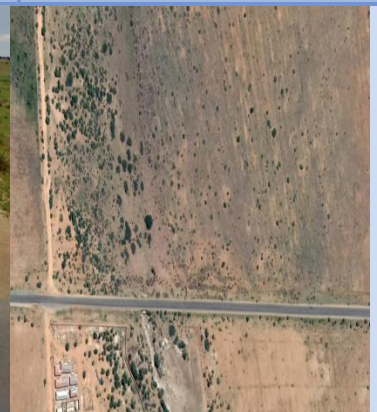
Picture 1: Site along the access gravel road connecting from the Bray Road



Picture 2: Bray Road from Mahikeng via Airport Road



Picture 3: Access Road from the Bray Road



Picture 4: Site from an aerial view

3.4 Waste management

Domestic waste will be stored in containers and collected by private waste collection company procured by the proponent. Hazardous waste is stored and disposed of at the relevant landfill site.

3.5 Traffic congestion

Filling station is located along the Bray Road which is not very busy and there will be no possibility of congestion in the area.

HOW CAN YOU BE INVOLVED?

A Public Participation Process (PPP) is being conducted as part of the Basic Assessment. The aim of the PPP is to allow everyone who is interested in, or likely to be affected by, the proposed project to provide input into the process.

The Public Participation Process will include:

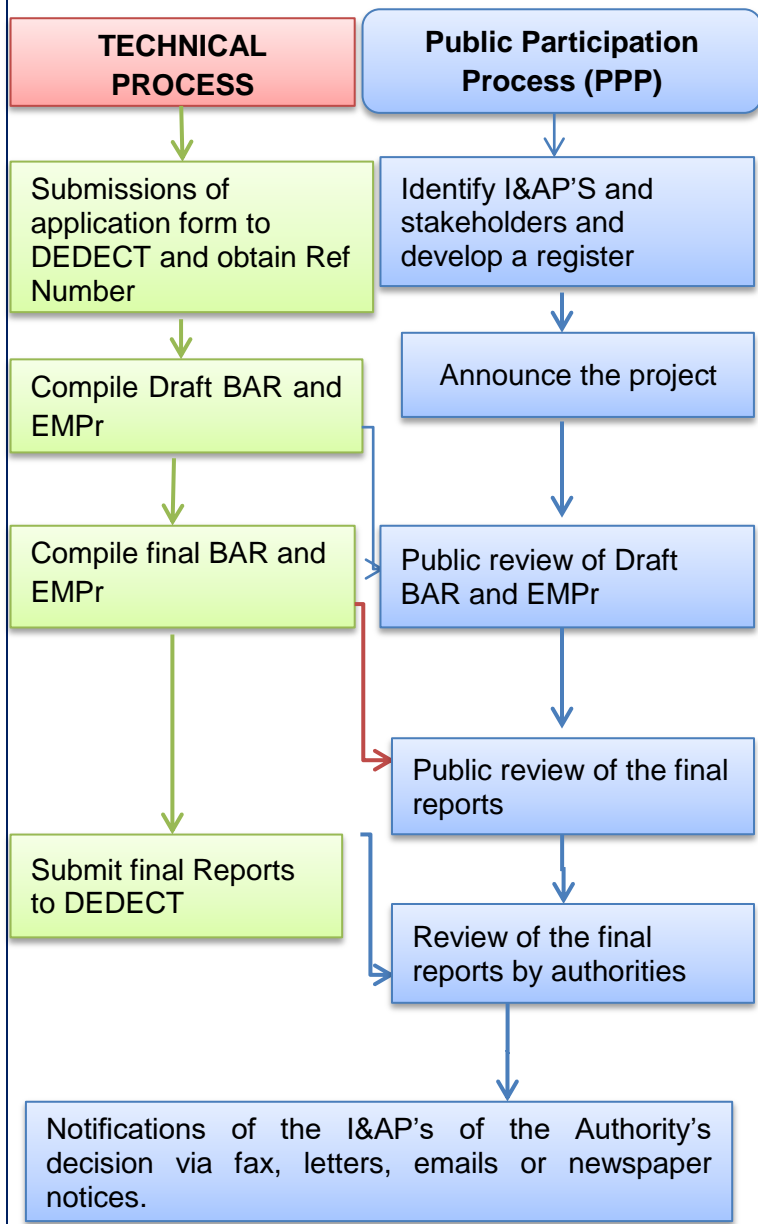
- Advertisement in the local newspaper “*The Mail*” of the 05th of March 2021;
- Circulation of the BID (this document) to all I&AP’s identified.
- Comment’s period
- Review of the draft Basic Assessment by all I&AP’s.
- A public meeting (if required)

Should you wish to register as an Interested and Affected Party on this project, kindly complete the form below and send it to the address provided on the first page of this Background Information Document (BID).

7. PUBLIC PARTICIPATION PROCESS

During a BA process, potential impacts associated with the development of a filling station be identified and assessed. The study will identify specialist studies required, assess them and include the results on the draft Basic Assessment Report for your comments.

The BA process that will be undertaken comprises of the technical and a public participation process - refer to figure below for an illustration of the processes/activities that will be undertaken as part of the BA process.



REGISTRATION AS AN INTERESTED AND AFFECTED PARTY FOR THE PROPOSED DEVELOPMENT OF FILLING STATION AND RELATED INFRASTRUCTURE AT MOLETSAMONGWE VILLAGE ON THE FARM MOLOPO 302 JO, MAHIKENG LOCAL MUNICIPALITY, NORTH WEST PROVINCE

REGISTRATION AND COMMENT SHEET

Please register as an Interested and Affected Party (I&AP) by completing this form and return it on or before Monday, **05 April 2021**.

Title: _____ **Name:** _____ **Surname:** _____

Company Name/Organization/ Nature of Interest: _____

Postal Address: _____

Telephone No.: _____ **Fax No.:** _____

Area: _____ **Postal Code:** _____

Cell phone Number: _____ **E-Mail Address:** _____

Kindly list any comments, concerns or suggestions to be considered during the Impact Assessment Report (You may attach additional sheets of paper if required)

In the interest of an open and just process, please declare any interest in this matter, please note that failure to declare an interest may nullify your comment or even lead to legal action:

What are your main areas of your interest with regards to this development?

Do you have any issues, comments and/or concerns regarding this development?

Thank you for your participation please be assured that your comments will form part of the final Basic Assessment Impact Report to be submitted to the Competent Authority.

APPENDIX I (3)–PROOF OF NEWSPAPER ADVERTISEMENTS

APPENDIX I (4) – COMMUNICATIONS TO AND FROM INTERESTED AND AFFECTED PARTIES

APPENDIX I (5)–COMMENTS FROM I&AP’S ON BASIC ASSESSMENT (BA) REPORT

APPENDIX I (6) – COPY OF THE REGISTER OF I&APS

APPENDIX J: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

**ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE
CONSTRUCTION AND OPERATION OF A FILLING STATION ON THE
FARM MOLOPO 302 JO, MAHIKENG LOCAL MUNICIPALITY, NORTH
WEST PROVINCE**



PREPARED BY:

BLK2 ENVIRONMENTAL SOLUTIONS (PTY) LTD



PREPARED FOR:

GOFAONE SECURITY AND PROJECT COMPANY (PTY) LTD

DEFINITIONS

Dangerous Goods: means goods as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated “List of classification and labelling of chemicals in accordance with the globally Harmonized System (GHS)” published by Standards South Africa.

Contractor: A person or company appointed by the applicant to carry out stipulated activities.

Construction: means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

Construction activity: Refers to any action taken by the Contractor, his subcontractors, suppliers or personnel in undertaking the construction work.

Cleared surface: “surface vegetation” will be deemed to be any woody or herbaceous vegetation but exclude grasses, sedges, rushes and reeds. Clearing and grubbing shall for the purpose of this specification mean the removal of all woody and herbaceous vegetation including stumps, but excluding grass and groundcover vegetation.

Disturbance: Any event or series of events that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.

Earth Works: This involves construction machinery, dampening and general preparation of the site for construction purposes.

Environment: In terms of the National Environmental Management Act (NEMA) (No 107 of 1998), “environment” means the surroundings within which humans exist and that are made up of: (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) of (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental aspect: those components of the company’s activities, products and services that is likely to interact with the environment.

Environmental awareness training course: A presentation given to the Contractor and its Sub-contractors to raise environmental awareness and ensure that all staff, Contractor(s) and Sub-contractor(s) are familiar with or made aware of the contents of the Environmental Authorisation (EA) and the Environmental Management Programme (EMPr).

Environmental Control Officer: Either an internal staff member of the Engineer / Contractor or an external Environmental Consultant assigned to the project. The Environmental Control Officer will be part of the Project staff and will advise the Engineer on all environmental matters relating to the works, in terms of this EMPr.

Environmental Incident: Any action undertaken (or omitted) by the proponent or his duly appointed representatives (e.g. contractors) that results in overly/unnecessary disturbance or damage to the environment. Non-adherence to environmental legal requirements/laws (including the stipulations of authorisations issued in respect of a proposed activity e.g. those contained in an Environmental Authorisation).

Environmental impact: The change to the environment resulting from an environmental aspect (an activity) on the environment, whether desirable or undesirable. An impact may be the direct or indirect consequence of an activity.

Environmental Officer: Person/party appointed to monitor compliance with the Environmental Management Program.

Environmental Management Program: A guideline document/directive outlining the Program (EMPr) for mitigation, monitoring and institutional measures to be taken during project implementation and operation to avoid or control adverse environmental impacts, as well as the actions needed to implement these measures (World Bank, 1999:1).

Filling Station: also known as a garage or a petrol station is a facility which sells fuel and lubricants for motor vehicles.

Hazardous material/substances: This refers to any substance that contains an element of risk and could have a deleterious effect on the environment.

Interested & Affected party: A person, group of people, an organisation (public or private), a business, or other party that has an interest or is affected in terms of their health, property rights, or economy by a proposed activity.

Impact: A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

Mitigation measures: Mitigation measures encompass all actions taken to eliminate, offset or reduce potentially adverse environmental impacts to acceptable levels (World Bank, 1999:1).

Oil, fuel and lubricants on site: Appropriate safety measures for accidental spillages are covered as well as appropriate storage of oil and lubricants. Used oil containers must be recycled and not dumped at the municipal waste site.

Project (life) cycle: Represents the various stages of which a project/activity consists including project identification, design, construction, operation as well as decommissioning.

Project Manager: The person responsible for co-ordination and integrating activities across multiple, functional lines.

Rehabilitation: defined as the return of a disturbed area to a state which approximates the state (where possible) which it was before disruption. Rehabilitation for the purposes of this specification is aimed at post-reinstatement re-vegetation of a disturbed area and the insurance of a stable land surface. Revegetation should aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.

Site Manager: The person, representing the Contractor, responsible for all the Contractor's activities on the site including supervision of the construction staff and activities associated with the construction Phase. The Site Manager will liaise with the Principal Agent in order to ensure that the project is conducted in accordance with the Environmental Management Plan.

ACRONYMS

EMPr: Environmental Management Programme

BAR: Basic Assessment Report

ECO: Environmental Control Officer

DWS: Department of Water and Sanitation

EA: Environmental Authorization

EAP- Environmental Assessment Practitioner

EIA: Environmental Impact Assessment

EIR: Environmental Impact Report

I&AP; Interested and Affected Party

PPE: Personal Protective Equipment

DEDECT: Department of Economic Development' Environment, Conservation and Tourism

1. INTRODUCTION AND BACKGROUND

Gofaone Security and Project Company (Pty) Ltd ('the Applicant') intends to construct a new petroleum filling station with the following:

- ✎ installation of 8 underground tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (ℓ) (combined storage capacity 184 cubic metres).
- ✎ Four posted canopy;
- ✎ Four pump islands in forecourt able to service a maximum of eight vehicles concurrently
- ✎ Develop a convenience store and fast-food outlet, ATM, generator (power for backup),
- ✎ Develop access/egress points, and provide a hardened surface and parking facilities.
- ✎ Construct an ablution facility that will drain in a proposed septic tank.
- ✎ Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
- ✎ Site storm water drainage linking to municipal storm water drain.

The proposed filling station is located on the farm Molopo 302 JQ (also known as Moletsamongwe), Mahikeng Local Municipality, North West Province. BLK2 Environmental Solutions (Pty) Ltd was appointed to manage and compile the Environmental Management Programme (EMPr) for the proposed development of a petroleum filling station and related infrastructure.

In general, the purpose of this EMPr is to formulate mitigatory measures that should be made binding to all contractors during construction of the proposed development, as well as measures that should be implemented during the operational phase. The EMPr is thus required to protect the natural, social and socio-economic environment during construction.

This EMPr is intended for the management of the impacts of construction of the proposed filling station. This EMPr is, therefore, a stand-alone document, which must be used on site during each phase of the development (planning, construction and operational phases). This document should be flexible so as to allow the contractor and developer to conform to the management commitments without being prescriptive. The management commitments prove that the anticipated risks on the environment will be minimised if they are adhered to consistently.




The onus set out in the EMPr rests with the developer, main Contractor and subcontractors, which promotes responsibility and commitment. Any parties responsible for transgression of the underlying management measures outlined in this document will be held responsible of non-compliances and will be dealt with accordingly. All the Environmental specifications and the procedures discussed in this document were developed in accordance with the relevant legislation applicable to the proposed development.

This document considers the impacts that are likely to arise from the implementation of the project and the mechanisms that are recommended to minimise the severity of these

impacts. The EMPr covers the principles, responsibilities and requirements applicable in order to implement effective environmental management, during the construction activities.

2. OBJECTIVES

The primary objectives of the EMPr are as follows:

-  to describe action plans for achieving the mitigation measures described in the report;
-  to indicate responsibilities, schedules and staff resources regarding the implementation of these action plans;
-  to highlight a monitoring programme, that will enable review of the success of the EMPr and the provision of such information to the relevant decision-makers.

3. NEMA MINIMUM REQUIREMENTS FOR EMPR CONTENTS

In terms of **Appendix 4**, Section 1 of GNR. 326 of the 2017 EIA Regulations the, EMPr must include:

- Details of –
 - The person who prepared the EMPr; and
 - The expertise of that person to prepare an EMPr.
- Information on any proposed management or mitigation measures that will be taken to address the environmental impacts that have been identified in a report contemplated by these Regulations, including environmental impacts or objectives in respect of:
 - Planning and design (included in the Construction EMPr);
 - Pre-construction and construction activities (included in the Construction EMPr);
 - Operation or undertaking of the activity;
 - Rehabilitation of the environment; and
 - Closure, where relevant.
- A detailed description of the aspects of the activity that are covered by the EMPr;
- An identification of the persons who will be responsible for the implementation of the measures contemplated;
- Proposed mechanisms for monitoring compliance with and performance assessment against the EMPr and reporting thereon;
- As far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development, including, where appropriate, concurrent or progressive rehabilitation measures;
- A description of the manner in which it intends to:
 - Modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
 - Remedy the cause of pollution or degradation and migration of pollutants;
 - Comply with any prescribed environmental management standards or practices;
 - Comply with any applicable provisions of the Act regarding closure, where applicable;

- Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
- Time periods within which the measures contemplated in the environmental management programme must be implemented;
- The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity;
- An environmental awareness plan describing the manner in which:
 - The applicant intends to inform his or her employees of any environmental risk which may result from their work; and
- Risks must be dealt with in order to avoid pollution or the degradation of the environment;
- Where appropriate, closure plans, including closure objectives.









The implementation of an EMPr for the proposed activity is a requirement of the NEMA EIA 2014 Regulations (as amended); though this development is not a listed activity, it is important that the EMPr addresses possible impacts and mitigation measures associated with the construction and operational phase of the development.

This EMPr was prepared by the following environmental consultant:


Name of the EAP	Education qualifications	Experience at environmental assessments (yrs.)
Philadelphia L. Bonokwane	Masters in Environmental Management (UOFS)	02 Years

4. PROJECT DESCRIPTION

The proposed Petroleum Filling Station will cover an area of 8 000m² for filling station and related infrastructure, and will include the following components:

-  installation of 8 underground tanks containing different forms of petroleum products (diesel~2 tanks), Unleaded Petroleum 93 (3 tanks) and leaded Petroleum 95 (3 tanks). Each with a capacity of 23,000 litres (ℓ) (combined storage capacity 184 cubic metres).
-  Four posted canopy;
-  Four pump islands in forecourt able to service a maximum of eight vehicles concurrently
-  Develop a convenience store and fast-food outlet, ATM, generator (power for backup),
-  Develop access/egress points, and provide a hardened surface and parking facilities.
-  Construct an ablution facility that will drain in a proposed septic tank.
-  Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
-  Site storm water drainage linking to municipal storm water drain.

Forecourt filling area, tanker refueling area and spillage drainage will be constructed in the following manner:

-  All surface areas will be constructed from concrete to form an impervious surface thereby preventing contamination of any soil and/or water resources; and

- ✎ Surfaces will be sloped such that spillages will drain into a spillage containment system situated on site thereby enabling the removal of spill material from entering the sewerage, or storm water system and preventing contamination.
- ✎ Erection of a suspended forecourt roof above the dispensers to protect customers and pumping facilities from the elements;
- ✎ Tank Gauging System, a complete fuel management system utilized by the service station to provide leak detection and reconciliation services for the filling station.

Due to the absence of municipal sewer connection on the site, a conservancy tank will be utilized for the associated ablutions only.

The administrative and shopping area of the proposed filling station will contain:

- ✎ Offices;
- ✎ Staff change rooms;
- ✎ Ablutions; and
- ✎ Storage areas.

Provision for customer parking bays and access to the station will be via the R49 Bray Road along the proposed site.

5. PROJECT LOCATION

The development is located on the farm Molopo 302 JQ (also known as Moletsamongwe village) within Mahikeng Local Municipality, North West Province. It is located adjacent the R 49 Bray Road. The geographical location of the site is **25° 49' 26.99" S; 25° 30' 12.22" E**. The figure below shows the topographical location/view of the area. The figure below indicates the location of the project site:



Figure 1: Aerial location of the proposed site

6. SCOPE

The framework within which this EMPr is developed includes identifying various activities, their occurrence in the construction process and the likely impacts that are associated with those activities. It is therefore necessary to sub-categorize the EMPr into Pre-Construction, Construction and Post-Construction activities. The first category of the EMPr which deals with the pre-construction activities identifies the impacts and mitigation measures that will need to be employed before the construction of the proposed project commences.

The second category deals with the construction activities and the mitigation measures that will need to be applied to reduce the severity of the impacts the proposed development may have on the surrounding environment.

The third category discusses the rehabilitation measures that will need to be implemented once the construction is completed, to ensure that the impact of the proposed rehabilitation on the environment is minimized. Furthermore, it will discuss activities that need to be undertaken to ensure that no environmental degradation occurs as a result of the project.

7. CONDITIONS OF ENVIRONMENTAL AUTHORISATION

This is a draft EMPr. The conditions of the Environmental Authorisation, pertaining to Compliance and Monitoring, will be recorded in this chapter of the finalised EMPr. If the proposed development receives a positive Environmental Authorization, the following conditions may be included:

- Reasonable measures must be undertaken to prevent pollution or degradation to the environment, and this should include measures to:
 - a) investigate, assess and evaluate the impact on the environment;
 - b) cease, modify or control any act, activity or process that has caused or may cause pollution or degradation to the environmental; and to c) remedy the effects of pollution or degradation.
- An EMPr that provides the mitigatory measures and management actions to ensure that the impacts of the development on the environment are minimised during the construction phase must be developed.
- The applicant is responsible for compliance with the provisions for “Duty of Care and Remediation of Environmental Damage” contained in Section 28 of the National Environmental Management Act, 107 of 1998, where the determination of environmental degradation and the need for remediation will be decided by the DEDECT.
- The DEDECT retains the right to inspect the proposed development during construction, and reserves its rights in terms of Section 28(4) of the National Environmental Management Act to ensure that reasonable measures are taken to prevent minimise or rectify pollution or degradation to the environment.
- The applicant is still obliged to obtain any necessary permits, licences or authorisation required in terms of any other relevant and applicable legislation.
- Failure to substantially and consistently comply with the conditions / clauses outlined in this EMPr will result in an order to cease construction, to be issued by the DEDECT.

- Records relating to the compliance / non-compliance with the conditions of this EMP must be kept in good order.
- The DEDECT must be notified within thirty days thereof, of any change of ownership and / or Project Manager of the entire project. Conditions contained within this EMP must be made available to the new Engineers and / or Contractors and are binding on the new Engineer and or Contractor.
- In the event of non-compliance by any Contractor implicated in this activity, the Applicant and/or his successor in title will be held liable.

8. PRINCIPLES

The following principles have informed the compilation of this environmental management programme:

- The environment is considered to be composed of both biophysical and social components.
- The National Environmental Management Act (Act 107 of 1998) defines 'environment' as meaning the surroundings within which humans exist and that are made up of -
 - The land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.
- Construction, in general, is a disruptive activity and all due consideration must be given to the environment, particularly the social environment, during the execution of the project to minimize the impact on the affected parties.
- Minimization of areas disturbed by construction activities will reduce the severity of the construction related environmental impacts and reduce rehabilitation requirements and costs.
- As minimum requirements, relevant standards relating to international, national, provincial and local legislation, where applicable, shall be adhered to. This includes requirements relating to waste emissions (e.g., hazardous, airborne, liquid and solid), waste disposal practices, noise regulations, road traffic ordinance etc.
- All reasonable effort is to be made to avoid, minimize, reduce, re-use, recycle and recover waste generated from the proposed development.
- Reasonable measures to avoid pollution and environmental degradation are to be provided for.
- The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling, or minimizing further pollution, environmental damage or adverse health effects must be paid for by the person responsible for harming the environment.

- The responsibility for the environmental, health and safety consequences of the proposed development exists throughout its life cycle.

9. LEGISLATION, PERMITS AND AGREEMENTS

In all instances, Oil Company, Service Providers, Contractors and the Developer and its employees should remain in compliance with relevant local and national legislation, regulations and standards. Particular attention should be paid to the requirements of the following national legislation:

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	ADMINISTERING AUTHORITY:	DATE:
National Environmental Management Act (NEMA) (Act No. 107 of 1998)	DEA	1998
Environmental Impact Assessment Regulations Government Notice No. R 327	DEA	2017
Integrated Environmental Management (IEM) Guidelines of the National Department of Environmental Affairs and Tourism	DEA	2002
Conservation of Agricultural Resources (Act No. 43 of 1983).	DEA	1983
Guidelines Compiled by the National Department of Environmental Affairs and Tourism in regard to the implementation of the regulations 385, 386 and 387, these being: <ul style="list-style-type: none"> ▫ Guideline 3: General Guide to Environmental Impact Assessment Regulations, 2006. ▫ Guideline 4: The public participation process. ▫ Guideline 5: Assessment of Alternative and Impacts 	DEA	2006
National Water Act (Act No. 36 of 1998).	DWS	1998
National Heritage Resources Act (Act 25 No. of 1999).	AMAFA	1999
Hazardous Substance Act (Act No. 15 of 1973).	1973	
Health Act (Act No. 63 of 1977).	(DOA)	1977
National Environmental Management: Air Quality Act (Act No. 39 of 2004).	DAEA	2004
South African National Standard SANS 1929: 2005	SABS	2005
National Environmental Management: Waste Act (Act No. 59 of 1998)	DEA	1998
South African National Standard (SANS) 10 089 The Petroleum Industry Part 1: Storage and distribution of petroleum products Part 2: Electrical Code Part 3: The Installation of Underground Storage Tanks etc. SABS 2008; 2007; 1999.	DEA	2008

10. CONDITIONS RELATED TO THE EMPr

This is a final EMPr which must be used for monitoring and managing construction and operation of the development. The conditions associated with this development pertaining to Compliance and Monitoring will be recorded in this chapter of the finalised EMPr.

Due to the development of a filling station, the EMPr will deal with aspects such as:

- ✎ Reasonable measures to be undertaken to prevent pollution or degradation to the environment, and this should include measures to:
 - a) investigate, assess and evaluate the impact on the environment;
 - b) cease, modify or control any act, activity or process that has caused or may cause pollution or degradation to the environmental; and to
 - c) remedy the effects of pollution or degradation.
- ✎ An EMPr that provides the mitigatory measures and management actions to ensure that the impacts of the development on the environment are minimised during the construction phase must be developed.
- ✎ The applicant is responsible for compliance with the provisions for “Duty of Care and Remediation of Environmental Damage” contained in Section 28 of the National Environmental Management Act, 107 of 1998, where the determination of environmental degradation and the need for remediation will be decided by the DEDECT.
- ✎ The DEDECT retains the right to inspect the proposed development during construction, and reserves its rights in terms of Section 28(4) of the National Environmental Management Act to ensure that reasonable measures are taken to prevent minimise or rectify pollution or degradation to the environment.
- ✎ The applicant is still obliged to obtain any necessary permits, licenses or authorisation required in terms of any other relevant and applicable legislation.
- ✎ Failure to substantially and consistently comply with the conditions / clauses outlined in this EMPr will result in an order to cease construction, to be issued by the DEDECT.
- ✎ Records relating to the compliance / non-compliance with the conditions of this EMPr must be kept in good order.
- ✎ The DEDECT must be notified within thirty days thereof, of any change of ownership and / or Project Manager of the entire project. Conditions contained within this EMPr must be made available to the new Engineers and / or Contractors and are binding on the new Engineer and or Contractor.
- ✎ In the event of non-compliance by any Contractor implicated in this activity, the Applicant and/or his successor in title will be held liable.

11. RESPONSIBLE PARTIES, SCHEDULING AND STAFF RESOURCES

The following parties shall participate in the environmental management on site:

1. The Provincial Department of Economic Development, Environment, Conservation and Tourism (DEDECT);
2. Department of Minerals and Energy (DME); and
3. The Environmental Control Officer (ECO) (to be independent and external and to conduct one year of auditing).

The overall legal responsibility for the development remains with Gofaone Security and Project Company (Pty) Ltd as the applicant. However, responsibility also rests with DEDECT and DME to monitor the specifications of the Filling Station (FS), particularly the Underground Storage Tanks (USTs) and associated structures and for the installation of the FS and USTs, and any legal latent defects and installation liabilities.

The Filling station (FS) Operator will be responsible for the day-to-day operation of the FS and compliance with required Environment, Health and Safety requirements and all required legislation.

In her capacity as the applicant, Gofaone Security and Project Company (Pty) Ltd may delegate suitably qualified person(s) with the responsibility to ensure implementation of the Operation EMPr. Such person(s) should:



-  be able to redefine and discuss changes to the EMPr with DEDECT, DME and the EM as required and inform the relevant parties of any changes; and
-  Secure the protection and rehabilitation of the environment post construction.

Table 1: outlines issues, management measures and the responsible person/s.

12. Environmental Management Programme

Where E = Engineer & ECO = Environmental Control Officer.

SECTION A: SITE ESTABLISHMENT AND PRELIMINARY ACTIVITIES

ISSUE	MANAGEMENT GUIDELINES	MONITOR	FREQUENCY
A. 1 Access to Site <i>Sound environmental principles must be followed whilst establishing access to the site.</i>	<u>A.1.1 Routing</u> a) The location of all underground services and servitudes must be identified and confirmed.	E	Prior to moving onto site.
	<u>A.1.2 Survey Points</u> a) Marking of survey points must be done with the Engineers approval.	E	During surveys and preliminary investigations
	b) Vegetation clearing must be kept to a minimum during the survey operations.	E	During surveys and preliminary investigations.
A.2 Setting up Construction Camp <i>Careful programming of the construction camp can ensure that time and costs associated with environmental management and rehabilitation are reduced.</i>	<u>A.2.1 Layout</u> a) The proposed site will act as the Contractors Camp. Should the contractor require additional space, full consultation shall take place with the relevant landowners, and written consent submitted to the Engineer prior to establishment of the construction camp. A site layout programme must be submitted to the Engineer for approval.	E/ECO	During surveys and preliminary investigations,
	b) There will be no overnight accommodation available at the Contractors Camp.	E/ECO	Prior to moving onto site.

	c) The size of the construction camp should be kept to a minimum.	E	During site set- up.
	d) Adequate parking must be provided for staff and visitors.	ECO	During site set- up.
	e) The contractor must attend to the drainage of the camp site to avoid standing water and / or sheet erosion.	ECO	Ongoing on a weekly basis.
	<u>A.2.2 Ablutions</u>		
	a) Until the conservancy tanks become operational, temporary chemical toilets must be provided by a company approved by the Engineer. These toilets must be made available for all site staff, and should be situated more than 50m from any natural water-body.	ECO	During site set- up.
	b) The construction of “long drop” toilets is forbidden.	ECO	Ongoing.
	c) Under no circumstances may open areas or the surrounding bush or degraded and built-up areas be used as a toilet facility.	ECO	Ongoing.
	<u>A.2.3 Provision for Camp Waste Disposal</u>		
	a) Bins and / or skips shall be provided at convenient intervals for disposal of waste within the construction camp.	ECO	During site set- up and ongoing.
	b) Bins should have liner bags for efficient control and safe disposal of waste.	C / E	Ongoing.
	c) Recycling and the provision of separate waste receptacles for different types of waste should be encouraged.	ECO	During site set- up and ongoing
A.3 Establishing Storage Areas Storage areas can be hazardous, unsightly and can	<u>A.3.1 General Substances and Materials</u> a) Choice of location for storage areas must take into consideration prevailing winds, distance to water bodies and general on-site topography.	ECO	During site set- up.

cause environmental pollution if not designed and managed carefully.	b) Storage areas must be designated, demarcated and fenced if necessary.	ECO	During site set- up.
	c) Storage areas should be secure so as to minimise the risk of crime. They should be safe from access by children and animals etc.	ECO	During site set- up.
	d) Fire prevention facilities must be present at all storage facilities.	ECO	During site set- up
<u>A.3.2 Hazardous Substances and Materials</u>			
	a) Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are: diesel, petroleum, oil, bitumen, cement, solvent based paints, lubricants, explosives, drilling fluids, pesticides, herbicides, LPG.	E	During site set-up, thereafter ongoing
	b) Material safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes.	E/ECO	During site set up.
	c) Hazardous storage areas must be bunded with an impermeable liner to protect groundwater and soil from contamination. The Contractor shall submit a method statement to the Engineer for approval.	E	Ongoing.
	d) Fuel tanks and refuelling will not be permitted on the site.	ECO	During site set up.
	e) Storage areas containing hazardous substance / materials must be clearly sign posted.	E	During surveys and preliminary investigations
	f) The proximity of houses, schools etc should be taken into consideration when deciding on storage areas for hazardous	E	When moving onto site.

	substances.		
	g) Residents living adjacent to the construction site must be notified of the existence of the hazardous storage area	ECO	When moving onto site.
	h) Staff dealing with these materials / substances must be aware of their potential impacts and follow appropriate safety measures.	ECO	During staff induction and ongoing as necessary.
	i) Contractors shall submit a method statement and programmes for the storage of hazardous materials and emergency procedures.	ECO	Prior to establishment of storage area.
A.4 Materials Management <i>–Sourcing materials must be sourced in a legal and sustainable way to prevent off-site environmental degradation.</i>	<u>A.4.1 Source of Materials</u> a) Contractors shall prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) and submit these to the Engineers for approval prior to commencement of any work.	E/ECO	On award of contract
	b) Where possible, a signed document from the supplier of natural materials should be obtained confirming that they have been obtained in a sustainable manner and in compliance with the relevant legislation.	ECO	On receipt of the natural materials
	c) Where materials are borrowed (mined), proof must be provided of authorisation to utilise these materials from the landowner / mineral rights owner and the Department of Minerals Resources (DMR).	ECO	On receipt of the borrowed materials.

<p>A.5 Education of Site Staff on General Environmental Conduct.</p> <p><i>These points need to be made clear to staff on site before the project begins.</i></p>	<p><u>A.5.1 Environmental Education and Awareness</u></p> <p>Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval. Topics to be covered should include:</p> <ul style="list-style-type: none"> ▫ What is meant by “environment”; ▫ Why the environment needs to be protected and conserved; ▫ How construction activities can impact on the environment; ▫ What can be done to mitigate against such impacts; ▫ Awareness of emergency and spills response provisions; ▫ Social responsibility during construction, e.g. being considerate to local residents. <p>It is the contractor’s responsibility to provide the site foreman with no less than 1 hour’s environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff.</p>	ECO	During staff induction and ongoing.
		ECO	Prior to moving onto site.
	a) Translators are to be used where necessary.	ECO	Ongoing.
	b) The Engineer / ECO should be on hand to explain more difficult / technical issues and to answer questions	ECO	Ongoing.
	c) The use of pictures and real-life examples is encouraged as these tend to be more easily remembered.	ECO	Ongoing.
	d) Use should be made of environmental awareness posters on site.	ECO	Ongoing.
	e) Construction workers should be made aware that they are not to make excessive noise (e.g. shouting / hooting)	ECO	Ongoing.

	f) The need for a 'clean site' policy also needs to be explained to the construction workers.	ECO	Ongoing.
	<u>A.5.2 Worker Conduct on Site</u> A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:	ECO	During staff induction, followed by ongoing monitoring.
	a) No alcohol / drugs to be present on site.	ECO	
	b) No firearms allowed on site or in vehicles transporting staff to / from site (unless used by security personnel).	ECO	
	c) Prevent excessive noise.	ECO	
	d) Prevent unsocial behaviour.	ECO	
	e) Bringing pets onto the site is forbidden.	ECO	
	f) No harvesting of firewood from the site or from the adjacent areas.	ECO	
	g) Construction staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives, (e.g. fires for cooking, the use of surrounding areas / bush as a toilet are forbidden).	ECO	
	h) Trespassing on private / commercial properties adjoining the site is forbidden.	ECO	
	i) Driving under the influence of alcohol is prohibited.	ECO	
	j) Other than the pre-approved security staff, no workers shall be permitted to live on site.	ECO	

A.6 Dust / Air Pollution <i>Establishment of the camp site and related temporary works can reduce air quality.</i>	<u>A.6.1 Air Quality</u> a) Vehicles travelling along the access road must adhere to the speed limits to avoid creating excessive dust.	ECO	Ongoing.
	b) Camp construction– areas that have been stripped of vegetation must be dampened periodically to avoid excessive dust.	ECO	Ongoing– more frequently during dry and windy conditions.
	c) The Contractor must make alternative arrangements (other than fires) for cooking and / or heating requirements. LPG gas cookers / heaters may be used provided that all safety regulations are followed.	E	Ongoing.
A.7 Soil Erosion <i>The stripping of vegetation during preliminary activities on site greatly increases the risk of soil erosion.</i>	<u>A.7.1 Conservation of Valuable Soil Resources</u> a) The time that stripped areas are left open to exposure should be minimised wherever possible. Care should be taken to ensure that lead times are not excessive.	E/ECO	Throughout the duration of the project.
	b) Wind screening and stormwater control should be undertaken to prevent soil loss from the site.	E/ECO	During site set up.
	c) Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set-up phase, i.e., topsoil is to be conserved while providing access to the site and setting up the camp.	E/ECO	Daily monitoring during site set up.
A.8 Stormwater <i>Serious financial and environmental impacts can be caused by unmanaged stormwater.</i>	<u>A.8.1 Stormwater Damage Prevention</u> a) To prevent stormwater damage, the increase in storm water runoff resulting from the construction activities must be estimated and the drainage system accessed accordingly. A drainage programme must be submitted to the Engineer for approval.	E	During surveys and preliminary investigations.

	b) During site establishment, stormwater culverts and drains are to be located and covered with metal grids to prevent blockages if deemed necessary by the Engineer.	E	During site set up.
	c) Temporary cut-off drains and berms maybe required to capture stormwater and promote infiltration, or to divert stormwater flow to avoid gulley erosion.	ECO	During site set up.
A.9 Water Quality <i>Incorrect disposal of substances and materials and polluted run-off can have serious negative effects on groundwater quality.</i>	<u>A.9.1 Maintenance of Water Quality</u> a) Storage areas that contain hazardous substances must be bunded with an approved impermeable liner.	E/ECO	During site set up.
	b) Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimise pollution risk and reduced bunding capacity.	E/ECO	During site set up.
	c) A designated, bunded area is to be set aside for vehicle washing and maintenance. Materials caught in this bunded area must be disposed of to a suitable waste site or as directed by the Engineer.	E/ECO	During site set up.
	d) Provision should be made during set up for all polluted runoff to be treated to the Engineers approval before being discharged into the stormwater system (this will be required for the duration of the project).	E/ECO	During site set up, to be monitored weekly.
A.10 Conservation of the Natural Environment <i>Alien plant encroachment is particularly damaging to natural habitats and is often associated with disturbance to the soil during construction</i>	A.10.1 Fauna and Flora a) No vegetation may be cleared without prior permission from the Engineer.	E/ECO	During site set up, and ongoing.
	b) Trees that are not to be cleared should be marked beforehand with danger tape. The ECO must be given a chance to mark vegetation that is to be conserved before the Contractor begins clearing the site.	E/ECO	During site set up.

<p><i>activities. Care must be taken to conserve existing plant and animal life on and surrounding the site.</i></p>	<p>c) Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas.</p>	ECO	Ongoing in camp site, haulage areas.
	<p>d) Disturbance to birds, animals and reptiles and their habitats should be minimised wherever possible.</p>	E/ECO	During surveys and preliminary investigations and ongoing.
	<p><u>A.10.2 Sensitive Habitats</u></p> <p>a) Areas identified by the Engineer or the ECO as being ecologically sensitive and adjacent to any construction work are to be suitably demarcated to prevent damage by plant and labour. Temporary bonnox type fencing should be used and should be moved in phases as the construction progresses from one area to the next.</p>	E/ECO	During surveys and preliminary investigations and ongoing.
<p>A.11 Set up of Waste Management Procedures</p>	<p>A.11.1 Waste Management</p> <p>a) The excavation and use of rubbish pits is forbidden.</p>	ECO	Ongoing.
	<p>b) Burning of waste is forbidden.</p>	ECO	Ongoing.
	<p>c) A fenced area must be allocated for waste sorting and disposal.</p>	ECO	During site set up.
	<p>d) Individual skips for different types of waste (e.g., 'household' type refuse, building rubble, etc.) should be provided.</p>	ECO	During site set up.
<p>A.12 Social Impacts – Visual & Noise</p> <p>It is important to take notice of the needs and wishes of those living or working adjacent to the site. Failure to</p>	<p>A.12.1 Public Participation</p> <p>a) During the set-up phase of the project, the Contractor needs to make contact with those people that are interested or affected by the development (I&AP's).</p>	E	Prior to moving onto site.
	<p>b) These people will usually have been identified by the environmental consultant that was assigned to the project.</p>	E	Prior to moving

do so can cause disruption to work and increase costs in the form of delays.	If this wasn't the case, the I&APs can be identified as those who either: - live close by the site; work close to the site; will have their services / infrastructure affected by the project; have a general interest in the project; and, the Councilor for the ward in which the construction is taking place.		onto site.
	<u>A.12.2 Noise Impacts</u>		
	a) Construction vehicles are to be fitted with standard silencers prior to the beginning of construction.	ECO	Prior to moving onto site.
	b) Equipment that is fitted with noise reduction facilities will be used as per operating instructions and maintained properly during site operations.	ECO	Prior to moving onto site.
	<u>A.12.3 Visual Impacts</u>	E/ECO	
a) Storage facilities, elevated tanks and other temporary structures on site should be located such that they have as little visual impact on local resident as possible.		During surveys and preliminary investigations and site set up.	
b) Special attention should be given to the screening of highly reflective materials on site.	ECO	During site set up.	
A.13 Cultural Environment	A.13.1 Protection of Cultural Environment Prior to the commencement of construction, all staff need to know what possible archaeological or historical objects of value may look like, and to notify the Engineer / Contractor should such an item be uncovered.	ECO	During site set up and ongoing.
A.14 Safety and Security	A.14.1 Fencing	E	During site set up.
	a) Secure the site in order to reduce the opportunity for criminal activity in the locality of the construction site. b) Such a confined site within a residential / commercial area should be fenced and manned to control the access of persons to	E	During site set up

	the site.		
	c) Potentially hazardous areas such as trenches are to be demarcated and clearly marked.	E	During site set up
	<u>A.14.2 Lighting</u> Lighting on site is to be set out to provide maximum security and to enable policing of the site, without creating a visual nuisance to local residents or businesses.	E	During site set up
	<u>A.14.3 Risks Associated with Materials on Site</u> a) Material stockpiles or stacks, such as pipes must be stable and well secured to avoid collapse and possible injury to site workers / local residents.	ECO	Ongoing.
	b) Flammable materials should be stored as far as possible from adjacent residents / businesses.	ECO	Ongoing.
	c) Fire-fighting equipment should be present on site at all times as per OHSA.	ECO	Ongoing.
	d) Obstruction to drivers' line of site due to stockpiles and stacked materials must be avoided, especially at intersections and sharp corners.	ECO	Ongoing.
	e) No materials are to be stored in unstable or high-risk areas such as in floodplains or on steep slopes.	ECO	Ongoing.
	f) All I&AP's should be notified in advance of any known potential risks associated with the construction site and the activities on it.	ECO	Ongoing.
A.15 Design	A.15.1 Conservancy Tank	E	Ongoing

	<p>If not probably managed, conservancy tanks can result in a number of health, aesthetic and environmental problems. Depending on the volume of sewage / wastewater anticipated to be generated by this development together with the design capacity of the conservancy tanks, as well as the rate of removal of the contents of the tanks, this type of system may be unsustainable in the long term. Should it be deemed as being the BPEO, then the following conditions are applicable:</p> <p>a) The tanks must be provided with fresh air inlets and intercepting grease traps.</p>		
	<p>b) The tanks must have airtight manhole covers to allow access to the tanks for the removal and safe disposal of the tank's contents.</p>	E	Ongoing
	<p>c) No industrial waste or refuse may be discharged into the conservancy tanks except by written agreement with the Mahikeng Local Municipality.</p>	E	Ongoing
	<p>d) The size of the conservancy tank must be determined by both the frequency of removal of its contents to the Wastewater Treatment Works and by the quantity of sewage/wastewater anticipated from the above project. Written confirmation must be obtained from the Mahikeng Local Municipality stating that it will provide the service of removal of the tank contents or the local "honey" collectors.</p>	E	Prior to construction commencement.
	<p>e) The contents of the tank must be removed by a vacuum tanker and conveyed to a Wastewater Treatment Works that is capable of processing the volume and contents of the conservancy tank. Ongoing written confirmation must also be obtained from the Mahikeng Local Municipality and retained as proof that the contents of the conservancy tanks have been received for proper treatment at the said wastewater treatment works.</p>	E	Ongoing

	f) A contingency plan must be drawn up to protect against overflow of the conservancy tank. A sump or lined pond can be designed below the conservancy tanks to contain any overflows.	E	Prior to construction commencement.
	g) Ingress of stormwater into the conservancy tanks must be prevented.	E	Prior to construction commencement.
	h) The conservancy tanks must be located out of the 1:100-year flood line of any water resources or alternatively, more than 100 metres from the edge of a water resource or a borehole which is utilised for drinking water or stock watering, whichever is further.	E	Prior to construction commencement.
	<u>A.15.2 Stormwater Management System</u>	E/ECO	Prior to construction commencement.
	a) The stormwater drainage network system must be kept separate from the waste water (water containing waste) system.	E/ECO	Prior to construction commencement.
	b) It is vitally important that storm water management is properly managed on site both during and after construction.	E/ECO	Prior to construction commencement.
	c) The Stormwater Management Plan must be approved by the Mahikeng Local Municipality prior to construction commencing.	E/ECO	Prior to construction commencement.
	d) After construction, the site should be contoured to ensure free flow of runoff and to prevent ponding of water.	E/ECO	Prior to construction commencement.
	e) Drainage must be controlled to ensure that runoff from the site will not culminate in off-site pollution or result in damage to properties downstream of any stormwater discharge, with particular emphasis on the settlement located down gradient of the proposed development.	E/ECO	Prior to construction commencement.
	<u>A.15.3 Underground Storage Tanks</u>	E	Prior to construction commencement.
	a) The USTs must comply with the relevant SANS/SABS Codes of	E	Prior to construction commencement.

	<p>Practice which include:</p> <ul style="list-style-type: none"> ▫ SANS 10400 TT 53 (Sections 1-6) ▫ SANS 10131 ▫ SANS 10108 ▫ SANS 11535 <p>SANS 10089 Parts 2 & 3 which requires:</p> <ul style="list-style-type: none"> ▫ The installation of a leak detection system including observation and monitoring wells situated around the tank to facilitate early warning that a leak has arisen. ▫ The provision of a plastic sheet below the tank that slopes towards an observation well. ▫ Installation of leak detectors on the pressure systems. 		
	b) The installation must comply with local authority bylaws.	E	Prior to construction commencement.
	c) The Underground Storage Tanks must be fitted with an overflow protection device.	E	Prior to construction commencement.
	d) The tanks must be designed so as to reduce the risk of soil and groundwater contamination.	E	Prior to construction commencement.
	e) The Underground Storage Tanks must be dipped daily and reconciled against volume to check for losses due to leakage.	E	Prior to construction commencement.
	f) The condition of the tanks, associated piping and the monitoring wells must be inspected on a regular basis.	E	Prior to construction commencement.
	g) The tanks and product lines must be pressure tested prior to commissioning.	E	Prior to construction commencement.

	<p><u>A.15.4 Monitoring</u></p> <p>A groundwater monitoring plan must also be submitted for approval to the Department of Water and Sanitation.</p>	E	Prior to construction commencement.
	<p><u>A.15.5 Spill Contingency Plan</u></p> <p>a) Spillages occurring at the filler point and dispensing (i.e., offloading) area must be contained and cleaned up. Any water containing waste (wastewater) generated as a result of the spillage and associated clean up, must be disposed of safely and in accordance with environmental legislation. No product must be allowed to be discharged into municipal storm water / sewer system and or surrounding environment.</p>	E	Prior to construction commencement.
	<p>b) A Spill Contingency or Emergency Response Plan must be drawn up and should include the following actions that need to be taken into account in the event of a spill:</p> <p>Stop the source of the spill;</p> <ul style="list-style-type: none"> ▫ Contain the spill; ▫ Report the spill to the Site Manager. Note that all significant spills must be reported by the Site Manager to the Department of Water and Sanitation (DWS), DEDECT, and the ECO; ▫ Remove the spilled product for treatment or authorised disposal; ▫ In the case of a minor spillage clean the affected area and drum all contaminated material for temporary storage until the waste can be collected and disposed of by a registered hazardous waste disposal contractor. In the case of a significant spillage the DEDECT and DWS will advise on appropriate emergency action protocol to be followed for the type of spillage; ▫ The Site Manager is to determine in conjunction with the ECO if there is any soil, groundwater or other environmental impact; ▫ If deemed necessary by the DEDECT, DWS or the ECO, remedial follow-up action must be taken; 	E	Prior to construction commencement.

	<ul style="list-style-type: none"> ▫ The incident and remedial action taken must be documented by the Site Manager and kept on file for reference purposes. If necessary, remedial action must be taken in consultation with Department of Water Affairs and the Department of Environmental and Sanitation; ▫ Compliance with relevant legislative and municipal requirements in terms of health and safety must be ensured; and ▫ A mass balance of products in and out must be prepared. 		
SECTION B: MANAGEMENT OF CONSTRUCTION ACTIVITIES AND WORKFORCE			
ISSUE	MANAGEMENT GUIDELINES	MONITOR	FREQUENCY
	<p><u>B.1.1 Maintenance of Access</u></p> <p>a) Contractors should ensure that access roads are maintained and in good condition by attending to potholes, corrugations and stormwater damage as soon as these develop.</p>	E	Weekly inspection.
	<p>b) If necessary, staff must be employed to clean surfaced roads adjacent to construction sites where materials have been spilt.</p>	ECO	When necessary.
	<p>c) Unnecessary compaction of soils by heavy vehicles must be avoided; construction vehicles must be restricted to demarcated areas, haulage routes and turning areas.</p>	ECO	Ongoing.
	<p>d) Cognisance of vehicle weight / dimensions must be taken when using access constructed out of certain materials (e.g. paved surfaces / cobbled entranceways)</p>	E	Ongoing.
B.2 Maintenance of Construction Camp	<p><u>B.2.1 Surfaces</u></p> <p>a) The Contractor must monitor and manage drainage of the camp site</p>	ECO	Ongoing.
	<p>b) Run-off from the camp site must not discharge into neighbours' properties.</p>	ECO	Ongoing.
	<p><u>B.2.2 Ablutions</u></p>	ECO	Weekly inspection.

	a) Chemical toilets are to be maintained in a clean state and should be moved to ensure that they adequately service the work areas.		
	b) The Contractor is to ensure that open areas or the surrounding bush are not being used as a toilet facility.	ECO	Weekly inspection.
	c) The use of chemical toilet facilities during the construction phase must not cause any pollution to any water resources nor pose a health hazard. In addition, these toilets must be situated out of the 1:100-year flood line of any watercourse	ECO	Weekly inspection.
	<u>B.2.3 Camp Waste Disposal</u>	ECO	Daily.
	a) The Contractor shall ensure that all litter is collected from the work and camp areas daily.		
	b) Bins and / or skips should be emptied regularly and waste should be disposed of at a registered landfill site. Waybills for all such disposal are to be kept by the Contractor for review by the Engineer / ECO.	ECO	Daily.
	c) A registered chemical waste company is to be used to remove waste from chemical toilets on site.	ECO	Daily.
	<u>B.2.4 Eating Areas</u>	ECO	Daily
	a) Eating areas should be regularly serviced and cleaned to ensure the highest possible standards of hygiene and cleanliness.		
	b) All litter throughout the site should be picked up and placed in the bins provided.	ECO	Daily
	<u>B.2.5 Housekeeping</u>	ECO	Weekly monitoring.
	a) The Contractor shall ensure that his camp and working areas are kept clean and tidy at all times.		
	<u>B.3.1 Environmental Education and Awareness</u>	E/ECO	Ongoing monitoring.
	a) The Contractor must monitor the performance of the		

<u>B.3 Staff Conduct</u>	construction workers to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary, the ECO and / or a translator should be called to the site to further explain aspects of environmental or social behaviour that are unclear.		
	<u>B.3.2 Worker Conduct on Site</u> a) The rules that are explained in the worker conduct section (see section a.5.2 of this EMPPr), must be followed at all times.	ECO	Ongoing.
<u>B.4 Dust / Air Pollution</u> <i>Main causes of air pollution are dust from vehicle movements and stockpiles, vehicle emissions and fires.</i>	<u>B.4.1 Air Pollution Prevention</u> a) Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust.	E	Ongoing.
	b) Access and other cleared surfaces must be dampened whenever possible and especially in dry and windy conditions to avoid excessive dust.	E	Ongoing.
	c) If dust is unavoidable, screening will be required utilising wooden supports and shade cloth.	E	As directed by Engineer.
	d) Vehicles and machinery are to be kept in good working order and to meet manufacturers specifications for safety, fuel consumption etc.	ECO	Ongoing.
	e) Should excessive emissions be observed, the Contractor is to have the equipment seen to as soon as possible.	E	As directed by Engineer.
	f) No fires allowed on site.	E	Ongoing.
	g) Stockpiles may cause dust and so must be managed in accordance with the guidelines in Materials Management (section B.9.1)	E	Ongoing.
	<u>B.5.1 Topsoil Stripping and Stockpiling</u> Once an area has been cleared of vegetation, the top layer	ECO	Ongoing.

<u>B.5 Soil Erosion</u>	(nominally 150mm) of soil should be removed and stockpiled in a designated area.		
	<u>B.5.2 Exposed Surfaces</u>	E/ECO	Ongoing.
	a) The full length of the works shall not be stripped of vegetation prior to commencing other activities. The time that stripped areas are exposed shall be minimised wherever possible.		
	b) Top soiling and revegetation shall commence immediately after the completion of an activity and at an agreed distance behind any particular work front.	ECO	As each activity is completed.
	c) Stormwater control (See B.6) and wind screening should be undertaken to prevent soil loss from the site.	E	Ongoing.
	d) Side tipping of spoil and excavated materials shall not be permitted – all spoil material shall be disposed of as directed by the Engineer.	E	Ongoing.
	<u>B.5.3 General Principles</u>	E	Ongoing.
	a) Measures to prevent excessive soil erosion must be implemented. Extra precautions must be taken as the soils in this area are deemed as highly erodible. If soil erosion cannot be prevented, it must be minimised.		
	b) Erosion control measures to be implemented in areas sensitive to erosion such as near water supply points, edges of slopes, etc. These measures could include the use of sand bags, hessian sheets, retention or replacement of vegetation.	E	
	c) Stockpiling of soil or any other materials used during the construction phase must not be allowed on or near steep slopes, near a watercourse or water body. This is to prevent pollution or the impediment of surface runoff.	E	
<u>B.6.1 General Principles</u>	E	Monitoring throughout the	

<u>B.6 Stormwater</u>	a) Earth, stone and rubble is to be properly disposed of so as not to obstruct natural pathways over the site. I.e. these materials must not be placed in stormwater channels, drainage lines or rivers.		duration of the project. weekly
	b) There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.	E/ECO	
	c) The use of high velocity stormwater pipelines should be avoided in favour of open, high friction, semi-permeable channels wherever feasible.	E/ECO	
	d) A number of smaller stormwater outfall points should be constructed rather than a few large outfall points.	E/ECO	
	e) Stormwater outfalls should be designed to reduce flow velocity and avoid stream bank and soil erosion.	E	
	<u>B.6.3 Un-channelled Flow</u> a) During construction un-channelled flow must be controlled to avoid soil erosion. Where large areas of soil are left exposed, rows of straw / hay or bundles of cut vegetation should be dug into the soil along contours to slow surface wash and capture eroded soil. The spacing between rows will be dependent on slope.	E/ECO	As surface becomes exposed.
	b) Where surface runoff is concentrated (e.g. along exposed tracks), flow should be slowed by contouring with hay bales or bundled vegetation generated during on-site clearance, or by inserting water directing 'speed' humps (or berms), along the track to channel water into small detention ponds or areas protected with hay bales for flow reduction and sediment capture.	E/ECO	Ongoing
	<u>B.7.1 Prevention of Water Pollution</u> a) Mixing / decanting of all chemicals and hazardous substances	ECO	Regular monitoring.

<p><u>B.7 Water Quality</u></p> <p><i>Water quality is affected by the incorrect handling of substances and materials. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.</i></p>	<p>must take place either on a tray or on an impermeable surface. Waste from these should then be disposed of to a suitable waste site.</p>		
	<p>b) Every effort should be made to ensure that any chemicals or hazardous substances do not contaminate the soils or ground water on site.</p>	ECO	Regular monitoring.
	<p>c) Care must be taken to ensure that run-off from vehicle or plant washing does not enter the ground water. Wash water must be passed through a three-chamber SOG trap prior to being discharged as effluent to a regular municipal sewer.</p>	ECO	Regular monitoring.
	<p>d) Site staff shall not be permitted to use any water-course or natural water source adjacent to or within the designated site for the purposes of bathing, washing of clothing or for any construction related activities. Municipal water (or another source approved by the Engineer) should instead be used for all activities such as washing of equipment or disposal of any type of waste, dust suppression, concrete mixing, compacting etc.</p>	ECO	Regular monitoring.
	<p>e) The filler point and dispensing (i.e. offloading) area must be hard surfaced to prevent infiltration. All surface water from these areas must be directed through an oil/water separator before being discharged into the onsite conservancy system. All uncontaminated stormwater must be channelled directly through the storm water system.</p>	ECO	
	<p style="text-align: center;"><u>B.8.1 Fauna & Flora</u></p> <p>As the work front progresses the Contractor is to check that vegetation clearing has the prior permission of the Engineer.</p> <p>a) Only trees that have not been marked beforehand are to be removed.</p>	E	Ongoing.
	<p>b) Gathering of firewood, fruit, muti plants or any other natural</p>	ECO	Ongoing.

<u>B.8 Conservation of the Natural Environment</u>	material on site or in adjacent areas is prohibited.		
	c) The hunting of birds and animals on site and in surrounding areas is forbidden.	ECO	Ongoing.
	d) Snares and traps on site and in adjacent areas are forbidden	ECO	Ongoing monitoring
	e) Immediate revegetation of stripped areas and removal of aliens by weeding must take place. This significantly reduces the amount of time and money that must be spent on alien plant management during rehabilitation.	ECO	Ongoing monitoring
	f) Alien vegetation encroachment onto the site as a result of construction activities must be controlled during construction.	ECO	Twice monthly monitoring.
	g) Where possible, cleared indigenous vegetation should be kept in a nursery for use at a later stage in the site rehabilitation process.	ECO	As the work front progresses.
	<u>B.9.1 Stockpile Management</u>	E/ECO	Location as directed by the Engineer.
	a) Stockpiles should not be situated such that they obstruct natural water pathways.		
	b) Stockpiles should not exceed 2m in height.	E/ECO	As this becomes necessary.
	c) If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or cloth (short timeframe), depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.	ECO	As this becomes necessary.
d) Stockpiles should be kept clear of weeds and alien invasive vegetation growth by regular weeding.	ECO	Monthly monitoring.	
<u>B.9.2 Handling of Hazardous Materials</u>	ECO	Ongoing	

<u>B.9 Materials Management</u>	a) All concrete mixing must take place on a designated, impermeable surface.		monitoring.
	b) No vehicles transporting concrete to the site may be washed on site	ECO	Ongoing monitoring.
	c) No vehicles transporting, placing or compacting asphalt or any other bituminous product may be washed on site.	ECO	Monthly.
	d) Lime and other powders must not be mixed during excessively windy conditions.	ECO	Ongoing monitoring.
	e) All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site.	ECO	Ongoing monitoring.
	f) Hazardous substances / materials are to be transported in sealed containers or bags.	ECO	Ongoing monitoring.
	g) Spraying of herbicides / pesticides should not take place under windy conditions and must comply with OHSWA specs and other chemical handling laws.	ECO	When being used.
	h) The Contractor is to provide a method statement for dealing with accidents / spillages of hazardous materials. This statement must be handed to the Engineer as well as to Department of Water Affairs (DWS) should the incident occur near to a body of water.	ECO	When being used.
<u>B.9.3 General</u> The storage of oils, materials, chemicals, fuels etc. to be used during the construction phase must not pose a risk to the surrounding environment. Such storage areas must be located out of the 1:100-year floodline of any watercourse in the area and unauthorised access to these areas must be controlled. Temporary bunds must be constructed around chemical or fuel storage areas to contain possible spillages.	ECO	Ongoing monitoring	

<p>B.10 Waste Management</p> <p><i>Definition:</i></p> <p><i>“Refuse” refers to all construction waste (such as rubble, asphalt millings, cement, timber, cans, other containers, wire and nails), household and office waste.</i></p>	<p><u>B.10.1 On-Site Waste Management</u></p> <p>a) Refuse must be placed in the designated skips / bins which must be regularly emptied. These should remain within demarcated areas and should be designed to prevent refuse from being blown out by wind.</p>	ECO	Ongoing monitoring.
	<p>b) In addition to the waste facilities within the construction camp, provision must be made for waste receptacles to be placed at intervals along the work front.</p>	ECO	Ongoing monitoring.
	<p>c) Littering on site is forbidden and the site shall be cleared of litter at the end of each working day.</p>	ECO	Ongoing monitoring.
	<p>d) Recycling is to be encouraged by providing separate receptacles for different types of waste and making sure that staff are aware of their uses.</p>	ECO	Ongoing monitoring.
	<p><u>B.10.2 Waste Disposal</u></p> <p>Non – hazardous waste</p> <p>All waste must be placed in skips and stored in a designated storage/collection area and must be removed from the site and transported to the nearest registered municipal landfill site. The recycling of suitable material (i.e. glass, paper, plastic, etc) should be encouraged</p>		
	<p>a) Waybills proving disposal at each site shall be provided for the Engineers inspection.</p>	E/ECO	Checked at each site meeting.
	<p>b) Construction rubble shall be disposed of in a pre-agreed, demarcated spoil dumps that have been approved by the Engineer, or disposed of at a registered municipal landfill site.</p>	E/ECO	Ongoing monitoring.
	<p>c) Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor. Care</p>	ECO	Monitored weekly.

	must be taken to avoid contamination of soils, water pollution and nuisance to adjoining areas.		
	d) All waste generated from this project must be disposed of in a suitable manner so as not to cause any surface and groundwater pollution or a health hazard.	ECO	Monitored weekly and at the start of builders holidays.
	<u>Hazardous Waste</u> a) Hazardous waste disposal must be carried out by an approved waste contractor.	ECO	Ongoing.
	b) A sump must be created for concrete waste. This is to be de-sludged regularly and the cement waste is to be removed to an approved tip site.	E/ECO	Ongoing.
B.11 Social Impacts	<u>B.11.1 Disruption of Infrastructure and Services</u>	E	Ongoing.
<i>Regular communication between the Contractor and I&APs is important for the duration of the contract.</i>	a) Contractors' activities and movement of staff to be restricted to designated construction areas.		
	b) Should the construction staff be approached by members of the public or other stakeholders, they should assist them in locating the Engineer or Contractor, or provide a number on which they may contact the Engineer or Contractor.	E/ECO	Ongoing.
	c) The conduct of the construction staff when dealing with the public or stakeholders shall be in a manner that is polite and courteous at all times. Failure to adhere to this requirement may result in the removal of staff from the site by the Engineer.	E	Ongoing.
	d) Disruption of access for local residents must be minimised and must have the consent of the Engineer.	E	Ongoing.
	e) The Contractor is to inform neighbours in writing of disruptive activities at least 24 hrs beforehand. This can take place by way of leaflets placed in the post boxes giving the Engineers and	E/ECO	At least 24 hrs prior to the activity

	Contractor's details or other method approved by the Engineer.		taking place.
	<u>B.11.2 Visual Impacts</u>	ECO	Ongoing.
	a) Lighting on the construction site should be pointed downwards and away from oncoming traffic and nearby houses.		
	b) The site must be kept clean to minimise the visual impact of the site.	ECO	Ongoing – weekly monitoring.
	c) If screening is being used, this must be moved and re-erected as the work front progresses.	ECO	Ongoing.
	<u>B.11.3 Noise</u>	ECO	Ongoing.
	a) Machinery and vehicles are to be kept in good working order for the duration of the project to minimise noise nuisance to neighbours.		
	b) Notice of particularly noisy activities must be given to residents / businesses adjacent to the construction site. Examples of these include: noise generated by jackhammers; blasting; drilling; dewatering pumps.	E/ECO	At least 24 hrs prior to the activity taking place.
	c) Noisy activities must be restricted to the times given in the Project Specification or General Conditions of Contract.	E	Ongoing.
	<u>B.11.4 Communication with Interested and Affected Parties (I&AP's)</u>	E/ECO	Monthly.
	a) The Engineer and Contractor are responsible for on-going communication with those people that are interested and/or affected by the project.		
	b) A complaints register should be housed at the site office. This should be in carbon copy format, with numbered pages. Any missing pages must be accounted for by the Contractor. This	ECO	Monthly.

	register is to be tabled during monthly site meetings.		
	c) I&APs need to be made aware of the existence of the complaints book and the methods of communication available to them.	ECO	Ongoing.
	d) Queries and complaints are to be handled by: <ul style="list-style-type: none"> ▫ documenting details of such communications; ▫ submitting these for inclusion in the complaints register; ▫ bringing issues to the Engineers attention immediately; and, ▫ taking remedial action as per Engineer's instruction. 	ECO	Ongoing.
	e) Selected staff are to be made available for formal consultation with I&APs in order to: explain the construction process and answer questions.	ECO	Ongoing.
B.12 Cultural Environment	<u>B.12.1 Protection of Cultural Environment</u>	E	As required
	a) Possible items of historical or archaeological value include old stone foundations, tools, clayware, jewellery remains, fossils etc.		
	b) Should anything of this nature be uncovered, the North West office of the South African Resources and Heritage Agency must be informed immediately	E	As and when required
SECTION C: POST CONSTRUCTION ACTIVITIES			
C.1 Construction Camp	<u>C.1.1 Construction Camp Rehabilitation</u>	E	Project completion.
	a) All structures comprising the construction camp are to be removed from site.		
	b) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint and fuels, etc. and these should be cleaned up.	E	Project completion.

	c) All hardened surfaces within the construction camp area should be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in appropriate re-vegetation specifications.	E	Project completion.
	d) The Contractor must arrange the cancellation of all temporary services	E	Project completion.
C.2 Vegetation	<u>C.2.1 Reinstatement of Vegetation</u>	E	Project completion.
	a) All areas that have been disturbed by construction activities (including the construction camp area) must be cleared of all alien invasive vegetation.		
	b) Open areas to be re-planted as per the re-vegetation specification.	E	Project completion.
	c) All vegetation that has been cleared during construction is to be removed from site or used as mulch as per the re-vegetation specification, (except for seeding alien invasive vegetation).	E	Project completion.
	d) The Contractor is to water and maintain all planted vegetation until the end of the defect liability period and is to submit a method statement regarding this to the Engineer.	E	As per the instructions of the Engineer
C.3 Land Rehabilitation	C.3.1 Land Rehabilitation	ECO	Project completion.
	a) All surfaces hardened due to construction activities are to be ripped and imported materials thereon removed.		
	b) All rubble is to be removed from the site to a registered municipal landfill site. Burying of rubble on site is prohibited.	ECO	Project completion.
	c) The site is to be cleared of all litter.	ECO	Project completion.

	d) Surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared in a manner approved by the Engineer.	E/ECO	Project completion.
	e) All embankments are to be trimmed, shaped and replanted to the satisfaction of the ECO.	ECO	Project completion.
	f) The Contractor is to check that all watercourses are free from building rubble, spoil and waste materials.	ECO	Project completion.
C.4 Materials and Infrastructure	<u>C.4.1 Removal of Barriers, Remediation of Damage</u>	ECO	Project completion.
	a) Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the Engineer.		
	b) All residual stockpiles must be removed to spoil or spread on site as directed by the Engineer.	ECO	Project completion.
	c) All leftover building materials must be returned to the depot or removed from the site.	ECO	Project completion.
	d) The Contractor must repair any damage that the construction works has caused to neighbouring properties.	ECO	As per the Engineer's instructions.
C.5 General	<u>C.5.1 General Remediation</u>	ECO/E	On completion of the construction and maintenance phases.
	a) A meeting is to be held on site between the Engineer, ECO and Contractor to approve all remediation activities and to ensure that the site has been restored to a condition approved by the Engineer, and to the satisfaction of the ECO.		
	b) Temporary road works must be closed and access across these blocked.	ECO/E	On completion of construction.
	c) All areas where temporary services were installed are to be rehabilitated to the satisfaction of the Engineer.	ECO/E	On completion of construction.

	<p><u>C.5.2 Wastewater Management</u></p> <p>a) The Mahikeng Local Municipality must be contacted with regard to any discharges into the stormwater drainage system or municipal sewer system</p>	ECO/E	On-going during operation
	<p>b) The oil/water separator must be properly maintained to prevent blockages and overflows.</p>	ECO/E	On-going during operation
	<p>c) The floor of the wash bay area must be hard surfaced. All drainage arising from the car wash area must be treated as wastewater (i.e. water containing waste) and must therefore also pass through an oil/water separator prior to being discharged into onsite conservancy system.</p>	ECO/E	On-going during operation
	<p><u>C.5.4 Water Resources Management</u></p> <p>a) There must be no unacceptable impact on the quality of both surface and groundwater in the area. If pollution of any surface or groundwater occurs, it must be immediately reported to the Department of Water Affairs and the appropriate mitigation measures must be employed to protect water resources.</p>	ECO/E	On-going during operation
	<p>The Development and its associated infrastructure must be situated out of the 1:100 year floodline and any associated drainage lines. Measures must be implemented to protect any drainage line and water resources from pollution.</p>	ECO/E	On-going during operation
SECTION D: OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME			
ISSUE	MANAGEMENT GUIDELINES	MONITOR	FREQUENCY
D1: HEALTH AND SAFETY	<p><u>D.1. Health and safety</u></p> <p>1. The Occupational Health and Safety Act, 1993 (No. 85 of 1993);</p>	ECO	Ongoing

	<p>2. As there may be potential for the filling station to impact the public, the Major Hazardous Installation Regulations (MHIR) in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) must be fulfilled prior to construction and operation taking place;</p> <p>3. A certificate of registration must be applied for before the fuel product is placed in the tank;</p> <p>4. All necessary occupational certificates and inspections must be complied with to the approval of the Mahikeng Local Municipality, prior to use of the USTs;</p> <p>5. The applicant must train safety representatives, managers and workers in workplace safety; and</p> <p>7. The operational process must be compliant with all safety and health measures.</p>		
<p>D2: ENVIRONMENTAL PROTECTION</p>	<p><u>D.2.1 SAFEGUARDING OF THE ENVIRONMENT, LOCAL COMMUNITY AND EMPLOYEES AGAINST FIRE RISK</u></p> <p>1. Smoking should be prohibited in the vicinity of flammable substances;</p> <p>2. Ensure the availability of sufficient firewater tie-in points;</p> <p>3. Any welding or other sources of heating of materials should be done in a controlled environment and under appropriate supervision and with the approval of the ECO;</p> <p>4. Training should be provided in the use of the appropriate fire-fighting equipment;</p> <p>5. Ensure availability of fire extinguishers and firefighting technique</p>	<p>ECO</p>	<p>Ongoing</p>

	<p>(SABS 089-1-1987);</p> <p>6. The ECO must co-operate closely with local fire authority to ensure that they know the layout of the site, what equipment and facilities are available, where they are located, and how they are used; and</p> <p>7. All employees must be aware of emergency/ contingency plans to ensure an understanding of the hazards and procedures required during an emergency situation.</p>		
	<p><u>D:2.3 SPILL CONTINGENCY PLAN</u></p> <p>1. A site-specific spill Contingency Plan (for construction, operation and the transportation of fuels to the Filling Station) must be compiled, to the approval of the Authorities, including the DEDECT, DWS and the Mahikeng Local Municipality, prior to construction and operation taking place. This should tie into the overall site plan/s.</p>	ECO, Manager	As at when it happens
	<p><u>D4: REFUELLING OF VEHICLES</u></p> <p>1. The forecourt area of the Filling Station and the filler points should be concreted and graded so that any effluent run-off will not flow to the street, or into watercourses or into storm water/ sewer systems but pass through the oil water separator sump/s before discharge into the sewer system; and</p> <p>2. Shear-off valves must be positioned below dispensers so that no spillage occurs if the dispenser is knocked over.</p>	E	Ongoing
	<p><u>D5: EFFLUENT HANDLING/ STORM WATER MANAGEMENT</u></p> <p>1. The clean (e.g., surface runoff from the driveway) and dirty (e.g. contaminated water from the forecourt and filling points) water systems must be separated to prevent contaminated run-off from entering the surface water, groundwater and soil;</p>	ECO	Ongoing

	<ol style="list-style-type: none"> 2. The filler points and the forecourt areas should be concreted and graded so that any effluent run-off will not flow directly to the surrounding roads, or into watercourses or into sewer/stormwater systems but shall pass through an appropriate oil/water separator system/ sump before being discharged into the sewer system, 3. All surface spillages must be contained on-site through channels and trenches and diverted to an appropriate oil/water separator system/ sump of sufficient capacity 4. No fuels/ oils must be allowed to discharge directly into stormwater pipes or drains and sewage manholes/pipes; 5. All waste oils, greases, fuels, chemicals etc. should be collected and disposed of in an appropriate manner off site. 6. The contents of grease traps or other waste oil, grease and/ or fuel disposal/ storage containers should under no circumstances be emptied and dumped to the surrounding area. Outflow must be directed to the septic tank; and 7. During fuel tanker delivery, the tanker driver must be present at all times during product offloading. 		
	<p><u>D6: HAZARDOUS SUBSTANCE MANAGEMENT (SPENT CHEMICALS, OILS, PAINT, GREASE, CEMENT, LUBRICANTS, SOAPS, FUEL ETC.)</u></p> <ol style="list-style-type: none"> 1. Hazardous substances should be disposed off at an appropriate classified waste site (unless it is to be recycled by approved methods), as per the National Environmental Management Waste Act 59 of 2008; 2. Waste from the oil interceptors must be disposed of to a suitable waste-handling contractor where Safe Disposal Certificates are to be issued; 3. All product spills within the bunded area must be appropriately cleaned up; 4. All contaminated spill fighting material such as fibres, soil, sandbags, etc. must be disposed of in an appropriate waste 	E/ Site manager	Ongoing

	<p>landfill site. Proof of this must be made available upon request;</p> <p>5. Ensure safe disposal of Methanol/water mixture used for removal of any residual water from the tank before commissioning;</p> <p>6. In the event of a spill, hazardous material may be generated. Such material must be disposed of at a suitable licensed waste disposal facility, with chain of custody documentation supplied as proof of end recipient;</p> <p>7. The transportation, handling and storage of hazardous and flammable substances must comply with all the provisions of the Hazardous Substances Act 1973, (Act No. 15 of 1973) associated regulations as well as a SANS 10228 and SANS 10089 codes;</p> <p>8. If pollution of any surface or groundwater occurs, it shall immediately be reported to the ECO/ DWS/ DEDECT and appropriate mitigation measures must be employed; and</p> <p>9. All spills must be reported to the DWS, DEDECT and other relevant authorities.</p>		
	<p><u>D7: WASTE AND POLLUTION MANAGEMENT</u></p> <p>1. An integrated waste management approach that is based on waste minimisation must be used and should incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste shall be disposed of at a landfill licensed in terms of section 20 (b) of the National Management Waste Act, 2008 (Act No. 59 of 2008);</p> <p>2. Stormwater should be regularly tested to ensure that the quality of stormwater out-flow complies to General Limit Values of the National Water Act (No. 36 of 1998) (NWA) as well as the Special Limit Values as specified in the Bulk Services Agreement. In this regard, the applicant will be required to install an approved monitoring system at an approved location, to be discussed with and approved by Mahikeng Local Municipality; and</p> <p>3. No water will be allowed to be discharged into any watercourse, wetland or to be irrigated without a license issued by DWS.</p>	ECO	Monthly and when necessary

	<p><u>D8: FUGITIVE AIR EMISSIONS</u></p> <ol style="list-style-type: none"> 1. All sample points must be enclosed and routed to drip tanks thus\ eliminating vapour within the facility; 2. Stage 1 Volatile Organic Compound (VOC) Vapour Recovery Systems should be installed onto fuel dispensing nozzles at the refuelling and forecourt areas. The ECO must ensure that every effort is made to limit gaseous emissions on their site and that all equipment used is manufactured to limit VOC emissions; 3. The design must use canned pumps and welded fittings; 4. Where required, double mechanical seals must be used; and 5. Operation procedures must be in place. 	ECO	Ongoing
SECTION E: MONITORING AND AUDITING			
	<p><u>E1: PRODUCT/ LEAK MONITORING AND DESIGN/ INSTALLATION</u></p> <ol style="list-style-type: none"> 1. All staff are to be given environmental awareness and health and safety training; 2. Monitoring of volumes of the underground storage tanks must take place on a daily basis to detect unexplained losses due to leakages. This should include dipping USTs and reconciling them against volume to check for losses due to leakages; 3. In the event where discrepancies are identified, the problem will be investigated and attended to, with a rehabilitation plan compiled where necessary. All the results obtained during environmental monitoring must be documented for audit purposes; 	ECO	As an when it happens

	<p>4. Records of leak tests must be kept;</p> <p>5. The condition of the tanks, associated piping and the monitoring wells must be inspected on a regular basis;</p> <p>6. Integrity testing of the tank must take place 5 years after installation, with repetition on a 5-year cycle thereafter. The results of these tests must be incorporated into an annual monitoring report for each of those years;</p> <p>7. At the end of the life span of the tanks, as governed by the supplier specification, tanks are to be replaced; and</p> <p>8. Fuel tanks, pipelines and separation filter monitoring are to be undertaken as determined by ECO and the Mahikeng Local Municipality.</p> <p>In addition, the following design, installation and monitoring requirements must be adhered to where they pertain to the operational phase:</p> <p>The design principles which follow are likely the minimum standards that will be required by DEDECT and the Mahikeng Local Municipality. It is recommended that these be used to refine the final design plans. Any deviation/omission from these minimum standards may be permissible provided they are discussed with and approved by DEDECT and the Mahikeng Local Municipality.</p> <p>The proposed UST installations shall thus include the following as a minimum:</p> <p>Tanks, Accessories, Pipework & Installation Specification.</p> <ul style="list-style-type: none"> ○ Tanks 		
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- The installation of aboveground diesel tanks with a capacity storage of 23 000 (ℓ) litres of petrol USTs;
 - Tanks must be double walled/" Jacketed" i.e., possessing secondary containment to prevent tank content release into surrounding soil and ground water. The UST must have an interstitial leak detection monitoring system between the two walls to monitor for product leakage. Should Sasol wish to make use of a single walled tank, the design specification must be discussed with and approved by the relevant approving authorities, including but not limited to the EM and the DEDECT;
 - The USTs must be reliable in the event of heavy rains and flooding. UST manholes shall be impermeable and resistant to fuel, they shall consist of a heavy-duty cast-iron cover, which shall prevent damage from surface traffic; and
 - Construction of a reinforced concrete slab over the USTs, its thickness and strength is to be determined by a qualified Engineer and as approved by the Mahikeng Local Municipality;
- **Accessories**
- The filler point and tank must be fitted with overfill protection. The critical level should be such that a space remains in the tank to accommodate the delivery hose volume (2%). Earthing and snap tight quick coupling is to be provided for loading of materials into tanks to minimise the risk of fires and prevent spillage and loss of materials; and
 - The USTs are to be fitted with a tank containment sump, fitted on top of the tank and a dispenser containment sump must be provided, fitted underneath the dispenser as containment. A Filler spill containment must also be provided for remote filler containment purposes;
- **Pipework**

	<ul style="list-style-type: none">▫ Installation of associated pipe work. This shall include the installation of internationally approved non-corrosive pipework systems. All underground piping is to be Petrotechniks UPP Extra piping (nylon lined, 10 bar rated). NextubeKableflex sleeving (oil industry green with a smooth internal bore) to be used as secondary containment. This is to limit the possibility of pipe failure due to corrosion; this being the most common cause of pipe failure before this system was introduced to South Africa. Should the applicant wish to make use of alternative design specifications these must be discussed with and approved by the relevant approving authorities, including but not limited to the EM and the DEDECT:▫ All pipeline connections are to be housed within impermeable containment chambers. A leak detector on all submersible pumps that automatically checks the integrity of the pipework on the pressure side of the pump must be provided. Pipelines must not retain product after use and no joints are to be made underground. An emergency shut-off valve must be supplied between the supply pipeline and dispenser inlet. All pipes (vent, filler and delivery) are to slope back to the USTs so that fuel does not remain in the pipes;▫ Vent pipes to be fitted with “Fulcrum” vertical vent roses, or an approved equally equivalent market product replacement, that conforms to these standards. Confirmation of filler point and vent position to be made by an approved Engineer for safety distances required; Vent pipes above ground are to be galvanised mild steel and are to be at least 1000mm above the roof height and away from any doors, windows, chimney openings and other sources of ignition; and▫ The tank product lines must be pressure tested prior to commissioning; Installation;▫ The excavation must be protected against the ingress of surface run off water, and is to be kept reasonably free of		
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	<p>subsurface water by pumping out if necessary;</p> <ul style="list-style-type: none"> ▫ The tank farm must be lined with a HDPE liner or a suitable clay layer to prevent infiltration of product to the ground water should a spill/leak occur (an impermeable liner is specifically important if bedrock is encountered during excavation activities); ▫ The UST is to be inspected before installation for damage, including fractures or damage to coating work. Leak and pressure tests must be conducted on tanks and pipelines to ensure integrity prior to operation and the inspection authority must issue pressure test certificates. Any repair work required is to be conducted according to SABS 1535 (Glass-reinforced polyester coated steel tanks, including jacketed tanks, for the underground storage of hydrocarbons and oxygenated solvents and intended for burial horizontally); The UST must be buried 750mm below finished ground level in accordance with SANS 10089-3; ▫ Backfill to the underground structures must comprise well compacted, possibly cement stabilized, inert granular material in order to ensure that no potentially active/ expansive soils can impact on the stability of the underground tanks or their feeder or outlet pipes, discussions in this regard should be held with the project Engineer ▫ The void around the UST must be back filled with a non-cohesive granular material to ensure that any product loss through the UST or ancillary pipe work will flow towards the low point; ▫ Grit/gravel should be packed around the piezometer to prevent ingress of fines and clogging of piezometer slots; ▫ The installation must comply with SANS 10 400TT (Fire Protection) 53 Sections 1-6 (The application of the National Building Regulations-Installation of Liquid Fuel Dispensing Pumps and Tanks); ▫ The local Fire Department must be informed two (2) working 		
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	<p>days before installation commences and to be called for inspection at the following stages:</p> <ul style="list-style-type: none"> ▫ Installation of tank on clean sand bed before backfilling; ▫ Witness pressure test (delivery lines 1000kPa, tank 35kPa); and ▫ Inspection of slab over tank before concreting; ▫ The installation of tanks must comply with SANS 10131: 2004 Section 5, (the storage and handling of liquid fuel – large consumer installations), SANS 10089 (Part I, II & III), SANS 1010; ▫ The installation must comply with local authority bylaws and all procedures and equipment used must be in accordance with the Occupational Health & Safety Act (No. 85 of 1993) and Regulations of South Africa 3:2004, SANS 10083: 2004 and any other required SANS/ SABS codes; ▫ The installation of tanks to comply with all other relevant National Building Regulations and Standards Act No.103 of 1977; and ▫ Upon completion of the UST installation, an engineer is to inspect and verify that the tanks and the associated infrastructure. A report thereafter, based on the engineer's findings, it to be submitted to the various authorities; <p>Leak detection/monitoring</p> <ul style="list-style-type: none"> ▫ USTs are to be fitted with a monitoring tube to allow for the monitoring of leaks through the tank surface; ▫ Leak detectors are to be installed to the submersible pumps within UST manholes to ensure that there are no line leaks; ▫ The installation of Soil Vapour Sampling Points will require the placement of a permeable coarse clean sand layer beneath the storage tanks for a vertical depth of approximately 0.5m to 1m in order to locate the vents in the 16mm diameter monitoring pipe over portion of this depth. If cement stabilisation is carried out within the compacted backfill beneath and around the tanks 		
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	<p>the permeable coarse clean sand could be placed on and around the perimeter of the basal concrete slab or alternatively beneath it and extending out for a metre beyond the slab; and</p> <ul style="list-style-type: none"> ▫ A ground-water monitoring plan is to be prepared by the proponent, prior to construction. The plan should include the above monitoring conditions and should provide a strategy for the management of any groundwater contamination detected; it should detail the frequency of monitoring as well as details of stock reconciliation's; <p>○ Forecourt Dispensing Area</p> <ul style="list-style-type: none"> ▫ Installation of pump islands in the forecourt area. The pumps are to be fitted with a Spill Containment Chamber; ▫ Construction of a concrete bunded reinforced graded slab over the forecourt area, with positive falls towards a centrally located catch-pit/sump. The slabs thickness and strength is to be determined by a qualified Engineer and as approved by the Mahikeng Local Municipality; ▫ The centrally located catch-pit/sump shall drain into a pollution containment chamber i.e., an approved oil/water separator system. Once the wash water has passed through the system, the separated oil must be collected regularly (every three months) by an approved waste contractor and removed to an approved hazardous waste disposal facility. ▫ Stormwater should be regularly tested before exiting the station and before entering the bulk stormwater lines, to ensure that the quality of stormwater out-flow from the Station complies to General Limit Values of the National Water Act (No. 36 of 1998) (NWA) as well as the Special Limit Values as specified in the Bulk Services Agreement. In this regard the FS will be required to install an approved monitoring system at an approved location, to be discussed with and approved by DEDECT and the Mahikeng Local Municipality; and the forecourt shall be covered. <p>○ Refuelling station</p>		
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	<ul style="list-style-type: none"> ▫ Filler point installation at the refuelling station; ▫ Provision of overspill protection devices in the tank filling pipework to prevent tank overfill during filling operations; ▫ Construction of a concrete bunded/ dished reinforced graded slab over the filler points at the refuelling station. The slabs thickness and strength is to be determined by a qualified Engineer and as approved by the Mahikeng Local Municipality. The filling station will have positive falls towards centrally located catch-pits; ▫ These catch-pits will drain to an underground storm water pollution containment chamber. An isolation valve will be provided downstream of this chamber. During all refueling events, the operator is to close the isolation valve to ensure that should a major spillage occur, all fuel is then contained within the chamber for later cleaning up operations. In all other circumstances besides refueling events, the isolation valve is to remain open to convey storm water (due to the area being uncovered) to a Calcamite sand, oil and grease trap. Once the containment chamber has been “cleaned” the valve downstream of the chamber is opened and any residual spillage on the apron or in the chamber will be piped with the runoff to the Calcamite sand, oil and grease trap located downstream of the isolation valve. The residual hydrocarbons will be separated out from the clean water based on the principal of specific gravity in the Calcamite sand, oil, and grease trap. There must be regular maintenance and inspections in accordance with the Operational Environmental Management Programme (EMPr). All pipe-work to and from the chamber and trap is to consist of hydro-carbon resistant HPDE material; ▫ In the event of an incident all fuel will be contained within the spill containment tank for later hazop cleaning. During normal operations the oil residue must be regularly (every three months) collected from the containment tank and the oil/waster separator 		
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	<p>by an approved waste contractor and removed to an approved hazardous waste disposal facility;</p> <ul style="list-style-type: none"> ▫ Stormwater should be regularly tested before exiting the FS and before entering the bulk stormwater lines, to ensure that the quality of stormwater out-flow from the PFS complies to General Limit Values of the National Water Act (No. 36 of 1998) (NWA) as well as the Special Limit Values as specified in the Bulk Services Agreement. In this regard the FS will be required to install an approved monitoring system at an approved location, to be discussed with and approved by DEDECT and the Mahikeng Local Municipality; and ▫ The refuelling station shall be uncovered. <p>○ Vapour Recovery Systems</p> <ul style="list-style-type: none"> ▫ Stage 1 Volatile Organic Compound (VOC) Vapour Recovery Systems, as approved by ACSA should be installed onto fuel dispensing nozzles at the refuelling and forecourt areas. ECO must ensure that every effort is made to limit gaseous emissions on their site and that all equipment used is manufactured to limit VOC vapour emissions. <p>○ General</p> <ul style="list-style-type: none"> ▫ The final plans must demonstrate compliance with all required SANS/ SABS codes and must be approved by the Mahikeng Local Municipality; ▫ A section drawing of the UST installation, including associated structures must be included on the final plans submitted and must be approved by the Mahikeng Local Municipality; ▫ The installation must comply with the National Water Act (No. 36 of 1998); ▫ The installation is to comply with local by-laws; ▫ The installation is to comply with the National Building Regulations and Standards Act No. 103 of 1977; ▫ All procedures and equipment used must be in accordance with the Occupational Health & Safety Act (No. 85 of 1993) and 		
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	<p>Regulations of South Africa; and</p> <ul style="list-style-type: none"> ▫ Due to the UST's being located mostly far from the built-up areas; it is unlikely that heritage resources will be encountered. However, in the event that these are encountered during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A registered heritage specialist must be called to the site for inspection. Under no circumstances shall any heritage material be destroyed or removed from the site. The relevant heritage resource agency must be informed about the finding." 		
E2: EMPr MONITORING			
	<ol style="list-style-type: none"> 1. The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner; 2. The applicant should appoint an independent external Environmental Control Officer (ECO) to undertake auditing for the first-year post construction. The ECO must liaise with the site manager, who will monitor day to day activities, to ensure compliance with the EMPr and to collate necessary required information for auditing purposes, with support where required from the AEM and AHSO. The overall monitoring and auditing of the site will be the responsibility of the ECO; however, the FS Operator must provide the necessary environmental control and audit measures and integrate these through their ISO 14001 Environmental Management Systems; 3. The ECO shall keep records of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO; 4. ECO shall remain employed indefinitely until closure of the site (should this occur). The ECO shall remain employed until the close out audit; one year post construction; and 5. Records relating to monitoring and auditing must be kept on site 		

	and made available for inspection to any relevant and competent authority in respect of the Filling Station.		
	<p><u>E3: AUDITING</u></p> <ol style="list-style-type: none"> 1. The holder of the Environmental Management Programme (EMPr) must submit to the relevant Authorities, via the ECO regular audit reports. This includes photographic monitoring; 2. Records relating to the monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in response of the development; 3. Auditing of the environmental monitoring and management actions undertaken is essential to ensure that it is effective in operation, is meeting specified goals, and performs in accordance with relevant regulations and standards; 4. Audit reports will state compliance and contain recommendations on non-compliance or potential non-compliance. Copies of the audit reports will be sent to the DWS, and DEDECT; 5. Non-compliance with the EMPr must be rectified within one week of the relevant offending party receiving an audit report and notice; and 6. Non-compliance with an audit report can result in a fine or an order, “to stop work” being issued by the DEDECT / DWS and the EM. 		
SECTION F: CLOSURE			
ISSUE	MANAGEMENT GUIDELINES	MONITOR	FREQUENCY
<p>NOTE: Decommissioning and/or closure of the petroleum filling station and/or the underground storage tanks are not anticipated. However, should this be required for any reason, the Department of Water Affairs must be consulted for guidance. The following conditions are generally required by the Department of Water Affairs.</p>			

F.1 TANK CLOSURE/DECOMMISSIONING	<p>a) A soil and groundwater contamination investigation must be conducted to determine the presence, nature and extent of any contamination. This will provide information as to the current status of the site in terms of the level of contamination, which will ultimately influence the level or type of remediation that needs to be undertaken, if any.</p> <p>b) The soil and groundwater must be analysed for Benzene, Toluene, Ethyl benzene and Xylene (BTEX's) and for lead based fuel, if this was previously stored in the tank.</p> <p>c) Prior to the tanks and associated piping being closed all residue product must be carefully removed for recycling or safe disposal. Safe disposal certificates must be obtained and kept on record as proof.</p> <p>d) A solid inert material must be used for filling the underground storage tank.</p> <p>Only clean soil must be used for backfilling purposes.</p>	<p>ECO</p> <p>E</p> <p>E</p> <p>E</p>	<p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p>
F.2 STORMWATER & WASTEWATER MANAGEMENT	<p>a) Water used for flushing the pipes and tanks must be disposed off safely if it is not suitable for disposal via the sewer system. The relevant department at the Local Municipality must be contacted with regard to the discharge of water containing waste to the sewer system.</p> <p>b) The water containing waste generated must pass through an oil/water separator prior to discharge to the municipal sewer system.</p> <p>c) It must be ensured that any water containing waste does not contaminate clean stormwater.</p>	<p>E</p> <p>E</p> <p>ECO</p>	<p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p>
F.3 WASTE MANAGEMENT	<p>a) All solid waste generated from the removal of the tanks must be handled according to the precautionary principle. This implies that waste (including soils, metals and other material) should be treated</p>	<p>ECO</p>	<p>Closure / Decommissioning</p>

	<p>as hazardous unless proven otherwise.</p> <p>b) All contaminated soil and other material must be disposed of at a permitted landfill site that is authorized to accept such wastes.</p> <p>c) Waste must not be allowed to be stockpiled on site for extensive periods but must be disposed off as generated.</p> <p>d) Any waste material temporarily stockpiled must be adequately protected from the environment to prevent leaching of potentially harmful contaminants.</p>	<p>E/ECO</p> <p>E</p> <p>E/ECO</p>	<p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p>
F.4 SPILLAGES	a) Any spillages during the decommissioning of the tanks must be reported to this Department and other relevant authorities.	E/ECO	Closure / Decommissioning
F.5 REMEDIATION	a) Clean-up or remediation of any contamination must be done in consultation with this Department.	E/ECO	Closure / Decommissioning
F.6 GENERAL	<p>a) A proper sampling protocol must be followed.</p> <p>b) In terms of Section 19 of the National Water Act, 1998 (Act 36 of 1998) and with regard to contamination and the remediation thereof, the owner of land, a person in control of land or a person who occupies or uses the land on which pollution has occurred, is not absolved from responsibility of any further and/or associated pollution arising from his property. Should there be a risk to downstream users or the environment from this site in the future, the Department would request that further remedial measures be instituted at this site.</p> <p>c) It must be noted that the National Environmental Management: Waste Act (Act 59 of 2008) was promulgated in 2008.</p> <ul style="list-style-type: none"> ▫ Part 2 of Chapter 4 places a general duty on the holder of a waste. ▫ Part 8 of Chapter 4 deals with contaminated land. This Section has yet to come into effect. 	<p>E</p> <p>E</p>	<p>Closure / Decommissioning</p> <p>Closure / Decommissioning</p>

	□ Draft norms and standards for the remediation of contaminated land and soil quality were gazetted in March 2012.		
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13. MONITORING AND AUDITING

The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. In the event where discrepancies are identified, the problem must be investigated and attended to. All the results obtained during environmental monitoring must be documented for audit purposes.

The applicant should appoint an independent external Environmental Control Officer (ECO) to undertake auditing for the first-year post construction. The ECO must liaise with the Project Manager, who will monitor day-to-day activities and collate necessary required information for auditing purposes.

The overall monitoring and auditing of the site will be the responsibility of the ECO, however the FS Operator must provide the necessary environmental control and audit measures and integrate these through their and ISO 14001 Environmental Management Systems.

Auditing of the environmental monitoring and management actions undertaken is essential to ensure that they are effective in operation, are meeting specified goals, and perform in accordance with relevant regulations and standards. Audits should be regularly conducted during the operation phase of the project to ensure adherence to the management measures contained in the Operation EMPr.

Integration with ISO 14001 Environmental Management system is essential. The following audit schedule is proposed:

- ECO - to undertake two audits during the first year of operation, with the final audit being a close out audit. This includes photographic monitoring; and
- Project Manager - to undertake biannual audits for the life of the FS's operation and ensure the outcome is documented into the ISO 14001 Environmental Management system.

Audit reports for each audit are to be compiled and submitted to the DEDECT and DWS.

14. CORRECTIVE ACTION

Performance measurement is an essential part of the EMPr. Key purposes of performance measures are to:

1. Determine whether the EMPr has been implemented appropriately;
2. Check that risk controls have been implemented and are effective;
3. Learn from the system failures through incident investigations; and
4. Provide information that can be used to review and where necessary, improve aspects of the system.

There are several levels at which corrective action can be implemented. These are listed and described below:

- **Verbal Instruction**

Verbal instructions are likely to be the most frequently used form of corrective action and are given in response to minor transgressions that are evident during routine site inspections. Verbal instructions are also used to create further awareness amongst contractors, as often the transgressions are a function of ignorance rather than vindictiveness.

- **Written Instructions**

Written instructions will be given following an audit. The written instructions will indicate the source or sources of the problems and proposed solutions to those problems. The implementation of these solutions will be assessed in a follow-up audit and further written instructions issued if required. Should a contractor not remedy and rehabilitate impacted areas after an environmental incident to the satisfaction of the employer's representative, then the employer's representative shall carry out the necessary actions. Costs to remedy environmental incidents as well as rehabilitation of impacted areas shall be paid by the Contractor/s concerned.

- **Contract Notice**

A contract notice is a more extreme form of written notice because it reflects the transgressions as a potential breach of contract. If there is not an adequate response to a contract notice, then the next step is to have the contractor removed from the site and the contract cancelled.

14.1 AMENDMENTS

Amendments to the EMP_r may be required during the operational phase. Any proposed amendments to the EMP_r, as may be specified in the audit reports, will be confirmed with the ECO prior to being issued as a formal amendment and the process for the amendment of the operational EMP_r must be undertaken as outlined in Chapter 4, Part 3, and Section 46 of GNR. 327, of the 2017 EIA Regulations, with prior written consent from the competent authority, the Department of Economic Development, Environment, Conservation and Tourism (DEDECT).

15. STATUS OF THE EMP_r

The compiled EMP_r is regarded as a draft according to Appendix 4, Section 33 of GNR. 327, of the 2017 EIA Regulations, once the draft is submitted to the relevant Competent Authority, in this case; DEDECT; It is expected that once the said competent Authority approves the EMP_r, it becomes a final document which will be used as a guideline during the planning, construction, operation and closure of the development.

APPENDIX K: CV OF THE EAP

APPENDIX L: ANY OTHER