

**Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)**

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**Kindly note that:**

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

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**DEPARTMENTAL DETAILS**

Gauteng Department of Agriculture and Rural Development  
Attention: Administrative Unit of the of the Environmental Affairs Branch  
P.O. Box 8769  
Johannesburg  
2000

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch  
Ground floor, Umnotho House, 56 Eloff Street, Johannesburg  
Email Address: bongani.shabangu@gauteng.gov.za

Administrative Unit telephone number: (011) 240 3377/3051  
Department central telephone number: (011) 240 2500

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(For official use only)

**NEAS Reference Number:**

**File Reference Number:**

**Application Number:**

**Date Received:**


If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

N/A

Is a closure plan applicable for this application and has it been included in this report?

N/A

If not, state reasons for not including the closure plan.

A closure plan is not required for this application as no closure of the site is envisaged.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

Yes

Refer to Appendix B Stakeholder Database

If no, state reasons for not attaching the list.

N/A

Have State Departments including the competent authority commented?

Yes

If no, why?

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# SECTION A: ACTIVITY INFORMATION

## 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

**Project title (must be the same name as per application form):**

Basic Assessment for the Development of a Service Station on Farm 751-IQ, Baragwanath Extension 5, Gauteng

Select the appropriate box

The application is for an upgrade of an existing development

☐

The application is for a new development

☒

Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

☐ YES ☒ NO

If yes, describe the legislation and the Competent Authority administering such legislation

N/A

If yes, have you applied for the authorisation(s)?

☐ YES ☒ NO

If yes, have you received approval(s)? (attach in appropriate appendix)

☐ YES ☒ NO

## 2. 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:

Title of legislation, policy or guideline:

Administering authority:

Promulgation Date:

National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended)	National & Provincial	27 November 1998
Environmental Impact Assessment (EIA) Regulations, 2014, as amended (GN R.326 of April 2017)	National & Provincial	07 April 2017
EIA Regulations Listing Notice 1 of 2014, as amended (GN R 327 of April 2017)	National & Provincial	07 April 2017
Heritage Resources Act (Act No. 25 of 1999)	South African Heritage Resources Association (SAHRA) Gauteng Provincial Heritage Resources Association (PHRA-G)	1999
National Environmental Management: Biodiversity Act (NEM:BA; Act No. 10 of 2004) • Threatened, Protected, Alien and Invasive Species Regulations • National list of Ecosystems Threatened and in need of Protection under Section 52(1)(a) of NEM:BA (GG 34809, Notice 1002) • Alien and Invasive Species Regulations (GG 37885)	Department of Environmental Affairs (DEA) Gauteng Department of Agriculture and Rural Development (GDARD)	2004
		2007
		9 December 2011
		1 August 2014
Noise Control Regulations (PN 24 of 1998)	GDARD	24 April 1998
Air Pollution Control By-laws of the City of Johannesburg Metropolitan Municipality	City of Joburg Metropolitan Municipality	30 July 2013
City of Johannesburg Metropolitan Municipality: Waste Management By-laws		
Gauteng Nature Conservation Bill (2014) to repeal the Gauteng Nature Conservation Ordinance (Ordinance 12 of 1983).	Gauteng Department of Agriculture and Rural Development	2014
City of Joburg Biodiversity Strategy and Action Plan 2015 (CoJ 2009).		2015
Gauteng Conservation Plan (C-Plan). Version 3.3		2011

(GDARD 2011).		
Gauteng Protected Areas Expansion Strategy (GDARD 2011).		2011
GDARD Requirements for Biodiversity Assessments. Version 3 (GDARD 2014).		2014

Description of compliance with the relevant legislation, policy or guideline:

Legislation, policy of guideline	Description of compliance
NEMA and relevant EIA Regulations, 2014 (GN R.326 of April 2017)	An Application for Environmental Authorisation (EA) was submitted to Gauteng Department of Agriculture and Rural Development (GDARD). The BAR, Environmental Management Programme (EMPr) and the stakeholder consultation process has been conducted in terms of the NEMA and associated regulations.
EIA Regulations Listing Notice 1 of 2014 as amended (GN R 327 of April 2017)	<p>An Application for EA was submitted to the GDARD. The BAR, EMPr and the stakeholder consultation process has been conducted with consideration of the EIA Regulations Listing Notice 1 of 2014, as amended.</p> <p>The Proposed service station triggers the following listed activity in Government Notice (GNR) 983 (2014, as amended):</p> <ul style="list-style-type: none"> <li>Activity 14 of Listing Notice 1 (GN R 983 of 2014, as amended): "The development 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".</li> </ul> <p>The proposed filling station will consist of:</p> <ul style="list-style-type: none"> <li>4 x 46m<sup>3</sup> petroleum underground storage tanks and associated infrastructure</li> <li>Service station</li> <li>A convenience store</li> <li>4 x drop down ATM's</li> </ul>

### 3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

**Note:** After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

No alternatives were considered

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	Description
1	Proposal	The development of a new Shell retail service station, located on the corner of Aerodrome and Chris Hani Roads.
2	Alternative 1	

3	Alternative 2	
	Etc.	

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

No alternatives have been considered in terms of location, activity, technology or design for the following reasons:

**Location Alternatives:**

No location alternatives for the site have been considered as Shell purchased the land in order to construct the service station. Shell has identified the site on the basis of availability and ease of access by potential customers (Aerodrome and Chris Hani Roads are visited frequently by traffic of both workers from the industrial area as well as the traffic coming off the highway).

**Activity Alternatives:**

The objective of the proposed project is to meet the current and future demand of fuel within the developing area. Furthermore, the sale of fuel is Shell's core business and considering alternative activities would be inconsistent with this objective.

The storage of fuel dispensing is governed by SANS 10089-3 and the operation of the fuel storage tanks must conform to these standards. In particular, USTs are the preferred storage method for the storage of petrol products while Aboveground Storage Tanks (ASTs) are not feasible due to the associated health and safety risks (i.e. risk of explosion). The best practicable alternative of storing fuel products has therefore been considered.

The service station provides motorists with a fuelling service for which there are no known replacement activities to serve this purpose. It is therefore not feasible to provide activity alternatives due to the specific nature of the proposed development.

**Technology Alternatives:**

Technology alternatives for the storage of petroleum products are generally concerned with either underground or aboveground storage. The site design as well as the product to be stored and dispensed dictate which alternative is favoured. Furthermore, technology alternatives are not possible as the South African Bureau of Standards dictates to which standards underground storage tanks and associated equipment are constructed, installed and operated. All proposed underground tankage is to adhere to the relevant SANS codes at a minimum and thus there are limited design alternatives.

**Design Alternatives**

1. Underground Storage vs Aboveground Storage

The alternative of an aboveground storage tank (AST) as opposed to an underground storage tank (UST) was considered. It should be noted that storing the fuel products aboveground may in some instances have the advantage of virtually eliminating the risk of groundwater contamination.

However, for safety reasons, the municipal and fire department's require that USTs are mandatory at service stations in order to minimise safety risks. The underground option was thus considered more environmentally and practically appropriate for this site.

2. Tank Capacity

Shell uses the services of a reputable tank design company known as Forgeweld. A variety of tank designs have been tried and tested over time, including a wide range of tank sizes from 4.5 to 30m<sup>3</sup> capacity tanks.

Shell is proposing to install:

- 4 x 46m<sup>3</sup> petroleum underground storage tanks (ULP95, ULP93, VPD50 and DX50)

The proposed tank capacities are in accordance with Shell's preferred design alternative, because as it maximizes fuel storage on the site. This reduces the number of tanker deliveries, thereby limiting the pressure on neighbouring traffic and it standardises fuel storage capacity, which is the trend across the oil industry. The choice of tank capacity is a function of the expected volumes to be traded at a site, accessibility for delivery tankers and environmental considerations. In this case the 46 m<sup>3</sup> capacity tank is considered to be optimal for this site.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (*Total environmental (landscaping, parking, etc.) and the building footprint*)

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the activity:	
	1,2885ha
	NA
	NA
Ha/ m <sup>2</sup>	

or, for linear activities:

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Length of the activity:	
	NA
	NA
	NA
m/km	

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the site/servitude:	
	NA
	NA
Ha/m <sup>2</sup>	

## 5. SITE ACCESS

### Proposal

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
	65.5 m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

There will be two points of access for the proposed service station. The first entry and exit of the service station will be from Southgate Road, which is just off Aerodrome Road. The second will be off Chris Hani Road.

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

### Alternative 1- NA

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
	m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

NA

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

### Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
	m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

NA

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives**

Section A 6-8 has been duplicated

1

Number of times

(only complete when applicable)

## 6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500
  - A1 = 1: 1000
  - A2 = 1: 2000
  - A3 = 1: 4000
  - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

The site plan (with the preferred site layout) is attached in *Appendix A*.

### FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

The locality map is attached in *Appendix A*.

## 7. SITE PHOTOGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

Site photographs are included in *Appendix E*.

## 8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.



# SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

**Note:** Complete Section B for the proposal and alternative(s) (if necessary)

## Instructions for completion of Section B for linear activities

Not applicable. The activity is not linear.

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route  times

## Instructions for completion of Section B for location/route alternatives

N/A as no location/route alternatives has been proposed.

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives  times (complete only when appropriate)

## Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route  (complete only when appropriate for above)

Section B – Location/route Alternative No.  (complete only when appropriate for above)

## 1. PROPERTY DESCRIPTION

**Property description:**  
(Including Physical Address and Farm name, portion etc.)

Baragwanath Extension 5, Gauteng. Corner of Aerodrome and Chris Hani Roads. See table below for details on the farm name.

FARM NAME	FARM NO/ERF NO	PORTION	LATITUDE	LONGITUDE
BARAGWANATH	751-IQ	0	26°15'48.9S	27°58'23.1E

## 2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**Alternative:**  
Preferred Site –

See property description table above for detailed coordinates of farm portions

**Latitude (S):**

See property description table above for detailed coordinates of farm portions

**Longitude (E):**

See property description table above for detailed coordinates of farm portions

**In the case of linear activities:****Alternative:**

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

	°		°
	°		°
	°		°

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

**Proposal**

Surveyor Codes for each portion of land are as follows:

FARM NAME	FARM NO/ERF NO	PORTION	LATITUDE	LONGITUDE	SG CODE
BARAGWANATH	751-IQ	0	26°15'50.75S	27°58'23.62E	T0IQ00270000001500000

PROPOSAL																			
ALT. 1																			
ALT. 2																			
etc.																			

**3. GRADIENT OF THE SITE**

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**4. LOCATION IN LANDSCAPE**

Indicate the landform(s) that best describes the site.

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
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**5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)

The geotechnical report (Appendix G2) states that in spite of the artificial drainage line and low-lying sump-nature of the site, there was no direct evidence of a shallow groundwater table in the profile.

There is however the presence of ferricrete in the profile, which is indicative of a seasonal shallow perched groundwater table beneath portions of the site, from time to time.

Dolomite, sinkhole or doline areas

According to the geotechnical report, rock may be anticipated within the upper 3m of the soil profile which would likely be exposed beneath the transported soils or ferricrete by means of heavier plant.

YES	NO
YES	NO

Seasonally wet soils (often close to water bodies)

The geotechnical survey done by Schwartz Tromp and Associates in 2005 indicates that there was no direct evidence of a shallow groundwater table in the profile.

However, the presence of ferricrete in the profile is indicative of a seasonal shallow perched groundwater table beneath portions of the site from time to time  
Unstable rocky slopes or steep slopes with loose soil

On the extreme southern sector of the site the natural soil profile is masked by a sizeable mound of uncontrolled fill. The nature of the fill is undetermined and needs to be removed in order for this portion of the site to be effectively utilized.  
Dispersive soils (soils that dissolve in water)

A narrow east-west band parallel with the N12 hosts an artificially created drainage path, due to the effluent from the adjacent SAB outlet.  
Soils with high clay content (clay fraction more than 40%)

Any other unstable soil or geological feature

The site is governed by the thick, potentially highly collapsible aeolian deposits, which blanket the site. All transported horizons (fill, Aeolian, ferruginised Aeolian) observed during the study by Schwartz Tromp and Associates are highly compressible and potentially highly collapsible, and unlikely to provide consistent founding required by industrial/commercial structures. It is recommended that these are avoided for major foundation work.

The dense residual through very soft rock quartzite, which is likely to be the prominent bedrock material underlying this site will, in the opinion of Schwartz Tromp and Associates, provide satisfactory, however relatively deep founding with recommended bearing pressures of 300kPa and 500kPa respectively.  
An area sensitive to erosion

Site class 2 / C2, which constitutes the bulk of the site, the foundation behaviour of which will be governed by the thick, potentially highly collapsible aeolian deposits, which blanket the site, overlying variably developed ferricrete, which largely mask the underlying geology.

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)

YES	NO
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If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>

c) are any caves located within a 300m radius of the site(s)

YES	NO
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If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>

d) are any sinkholes located within a 300m radius of the site(s)

YES	NO
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If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

## 6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

YES	NO
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The site has a medium sensitivity agriculture theme. The site is not fenced and is adjacent to a busy road and therefore it is unlikely to have been grazed significantly for many years.

**Please note:** The Department may request specialist input/studies in respect of the above.

## 7. GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld - good condition % =	Natural veld with scattered aliens % =	Natural veld with heavy alien infestation % =60	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % =

- The Terrestrial Sensitivity Scan was conducted by Scientific Terrestrial Services in September 2020. It was reported that no floral SCC were encountered during the field assessment. It is highly unlikely that any floral SCC will occur within the study area, due to overall lack of suitable habitat and high levels of disturbance and transformation within the study area and surrounding areas. *The vegetation structure and composition are severely altered and comprised mainly of alien and invasive species such as Eucalyptus grandis and Acacia decurrens.*

During the field assessment conducted by Scientific Terrestrial Services in September 2020, it was reported that no faunal SCC was observed. In terms of conservation, the likelihood that any such species will be encountered in or near the study area is considered low, due to the high levels of historic and ongoing anthropogenic activity and habitat transformation that has taken place within the study area and the immediate vicinity.

**Please note:** The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site

YES	NO
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If YES, specify and explain:

--

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

YES	NO
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If YES, specify and explain:

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Are there any special or sensitive habitats or other natural features present on the site?

YES	NO
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If YES, specify and explain:

As per the DEFF Screening Report, (DEFF, 2021), the area has a very high terrestrial biodiversity sensitivity, is a critical biodiversity area and an endangered ecosystem. The Site has a medium plant species theme sensitivity.

Was a specialist consulted to assist with completing this section

YES	NO
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If yes complete specialist details

Name of the specialist:

C. Steyn and H. de Beer from Scientific Terrestrial Services

Qualification(s) of the specialist:

Postal address:

PO Box 751779  
Gardenvue  
2047

Postal code:

Telephone:

011 616 7893

Cell:

E-mail:

admin@sasenvironmental.co.za

Fax:

086 724 3132

Are any further specialist studies recommended by the specialist?

YES	NO
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If YES,

specify:

If YES, is such a report(s) attached?

YES	NO
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If YES list the specialist reports attached below

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Signature of specialist:



Date:

13.10.2020

**Please note;** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

## 8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial <sup>AN</sup>	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport <sup>N</sup>	23. Train station or shunting yard <sup>N</sup>	24. Railway line <sup>N</sup>	25. Major road (4 lanes or more) <sup>N</sup>
26. Sewage treatment plant <sup>A</sup>	27. Landfill or waste treatment site <sup>A</sup>	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	34. Small Holdings	
Other land uses (describe):	<ul style="list-style-type: none"> <li>According to the Gauteng Conservation (C-Plan, 2011)) the study area is not located within a Critical Biodiversity Area (CBA) or Ecological Support Area (ESA), but the south eastern portion of the study area falls within an ecosystem considered to be critically endangered, known as Kliprivier Highveld Grassland (National Threatened Ecosystems, 2011).</li> <li>The study area is bordered by the N12 national roadway to the north, Aerodrome Road to the west and Chris Hani Road to the southwest.</li> <li>The Baragwanath South African Brewery Depot is situated next to the site.</li> <li>There are residential houses approximately 400m south of the site.</li> <li>The Southgate Road Lodge is located approximately 400m south-east of the site.</li> <li>The habitat within the study area is highly transformed and no longer representative of the natural conditions associated with the vegetation type. The high levels of ongoing anthropogenic activity within the study area, such as illegal dumping and veld fires further reduces habitat integrity of the study area.</li> </ul>			

**NOTE:** Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH				
1	1	15/25	15/18 25	15/25
1	1/25	25	25	25
1	1		15	1
1	1	1	15	1
9	9	9	9	17
SOUTH				

**Note:** More than one (1) Land-use may be indicated in a block

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached  
If yes indicate the type of reports below

YES	NO
-----	----

- Biodiversity verification and report update by Scientific Terrestrial Services CCGeotechnical investigation for the proposed township of Baragwanath Extension 5
- Terrestrial Sensitivity Scan
- Geotechnical Investigation Report
- Traffic & Access Study
- Heritage Impact Assessment
- Outline Scheme Report

## 9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The site is located in Baragwanath; which falls under the jurisdiction of the City of Johannesburg Metropolitan Municipality.

### **Municipal Demographics**

Johannesburg (referred to as the 'City') is home to more than 4.4 million people, accounting for about 36% of Gauteng population and 8% of the national population. Over the last decade the City has been growing faster than the Gauteng region. A key contributor to this is that the city continues to attract people from other provinces and internationally who are looking for better economic opportunities and quality of life.

The city's population is predominantly young, with the highest male and female population being in the 25-29 year age category. This can be attributed to migration from other parts of the country as young people look for jobs.

Although a considerable number of Johannesburg's residents are poor, it has a substantial middle- and upper class which competes in global financial and trade markets and adheres to international norms of urban consumption and culture. In addition, the city has a growing middle class which presents opportunities in terms of economic growth and the City's ability to improve its revenue base.

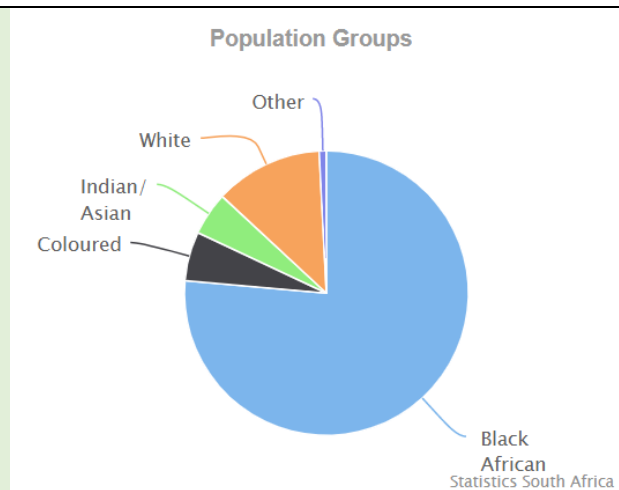
However, food security is still a major challenge in the City. Poor households are particularly at risk given the high proportion of income used for food and estimates state that as many as 42% of poor households are food insecure (CoJ IDP 2012/2016). Fifty percent (50%) of households in Gauteng earn less than R4 000 per month which reflects the vulnerability of the lower / middle income groups in Johannesburg.

The City's economy is driven primarily by four economic sectors which are: (a) finance and business services, (b) community services, (c) manufacturing, and (d) trade. These four economic sectors collectively account for more than 82% of economic activity within the City. These sectors also account for the highest levels of formal and informal employment (CoJ IDP 2012/2016).

In 2011, 63.8% were male headed, while 36.2% were female headed households. Approximately 65.8% of the total number of household heads in Johannesburg is employed. Quantec reported the dependency ratio in the City as 45.3% in 2011. (CoJ IDP 2012/2016). The significant number of the population 'not economically active' pushes up the dependency ratio.

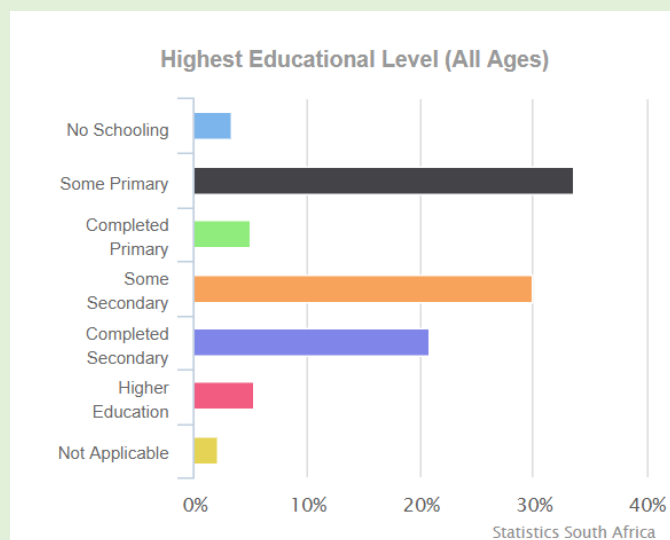
According to Census 2011, 38% of the City's population is employed. The actual employable population is actually 53.4% of the City's population. By deduction, 71% of all employable people are employed, or simply speaking, the City's unemployment percentage stands at approximately 29%.

Gauteng is ranked as the wealthiest province, with The City of Johannesburg Local Municipality having the greatest population density in South Africa (Statistics South Africa, 2019). As per the 2011 Census results, the Municipality has a total population of 4.4 million, of which 76.4% are black African, 12.3% are white people, 5.6% are coloured people and 4.9% are Indian/Asian. Of those 20 years and older 3.4% have completed primary school, 32.4% have some secondary education, 34.9% have completed matric, 19.2% have some form of higher education, and 2.9% of those aged 20 years and older have no form of schooling.



Source: Statistics South Africa

**Figure 1: Population Demographics of Johannesburg City Municipality**

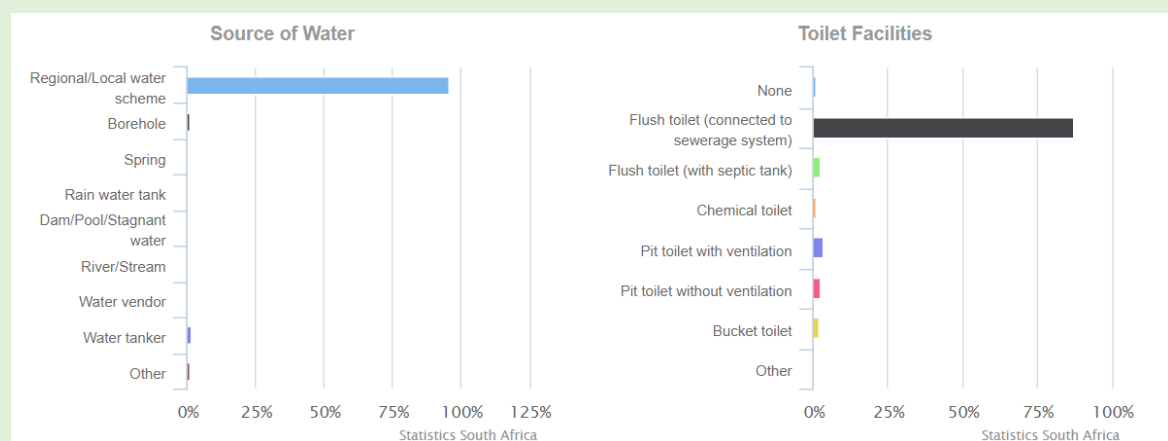


Source: Statistics South Africa

**Figure 2: Highest Education Level of citizens of Johannesburg City Municipality**

### Access to basic services

With respect to access to basic services, there are 1 434 856 households in the municipality, with an average household size of 2.8 persons per household. 64.7% of households have access to piped water inside dwelling/institution, 26.9% have water in their yard and 1.4% of households do not have access piped water. 87.1% of households have a flush toilet connected to sewerage and 90.8% of households have access to electricity for lighting.

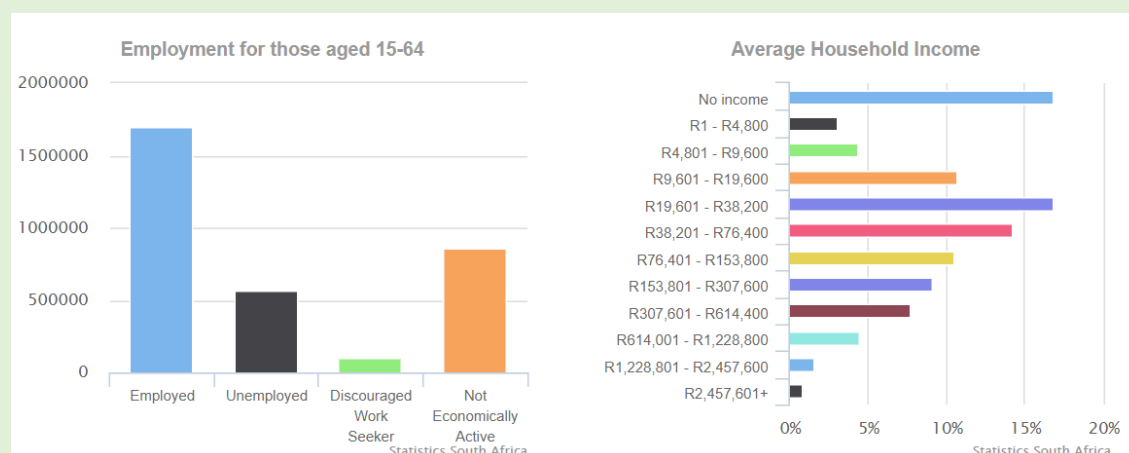


Source: Statistics South Africa

**Figure 3: Water Sources and Ablution Facilities of Johannesburg City Municipality**

### Employment

Of the 2 261 490 economically active (employed or unemployed but looking for work) people in the City of Johannesburg, 25.0% are unemployed. Of the 1 228 666 economically active youth (15–35 years) in the area, 31.5% are unemployed.



Source: Statistics South Africa

**Figure 4: Employment and Average Household Income within Johannesburg City Municipality**

## 10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
  - (i) exceeding 5 000 m2 in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

During the desktop review and DEFF Screening activity, no signs of culturally or historically significant elements were observed. ERM will submit a notice of intent to develop to the South African Heritage Resources Agency in respect of the proposed development. Moreover, the area is already disturbed by previous human activities and it is expected that no significant heritage resources may be found on site.

If YES, explain:

--

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

--

YES	NO



NA
----

Will any building or structure older than 60 years be affected in any way?  
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999  
(Act 25 of 1999)?  
If yes, please attached the comments from SAHRA in the appropriate Appendix

YES	NO
YES	NO

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

On 5 June 2020, the Minister of DEFF issued Directions regarding measures to address, prevent and combat the spread of COVID-19 relating to National Environmental Management Permits and Licences.

The purpose of these Directions is to limit the threat posed by the COVID-19 Pandemic, as well as to alleviate, contain and minimise the effects of the National State of Disaster. This is particularly relevant to environmental licencing, as well as the PPP processes.

In accordance with Annexure 3 of the Directions, a Public Participation Plan is required prior to submission of the Application for EA. The Public Participation Plan must be agreed to, and approved by, the Competent Authority (CA) prior to the application being submitted.

In light of the COVID-19 regulations, public participation will be undertaken as follows:

- Public participation will be conducted in line with the approved public participation plan submitted to GDARD on 25 August 2021 (Appendix B)

### **Site Visits**

- According to the EIA Regulations 2014 as amended, site visits are necessary for screening, in order to understand the environment in which the development will take place. A site visit was undertaken by the EAP on 20 August 2021, however the GDARD may also require a site visit and such scheduling will be done if applicable.

### **Registration of I&AP's**

- As part of the initial BA process, a stakeholder database was developed from identifying all competent authorities and relevant stakeholders, as well as identifying all surrounding businesses and listing their contact details. Stakeholder details were verified and updated as necessary. In complying with the EIA Regulations, ERM will notify registered stakeholders of the PPP via email on 27 August 2021.
- Furthermore, additional stakeholders and I&APs will be registered on the database throughout the consultation process. Notification of the new I&APs will be facilitated.

### **Site Notices**

- According to the EIA Regulations 2014 as amended, a notice board must be fixed at a place conspicuous to, and accessible by, the public; (i.e. at the boundary, on the fence or along the corridor of the site).
- A site notice was erected on site, main road closer to site on 20 August 2021 see Appendix 1.

### **Newspaper Adverts**

- Newspaper adverts were published in Newspaper in English, on Sowetan Newspaper on 23 August 2021 on page 6, see appendix B.

### **The Final BAR and EMPr Availability**

- The Final BAR and EMPr will be uploaded on a publically available website, [www.erm.com/aerodrome-bar](http://www.erm.com/aerodrome-bar), which will be hosted by ERM for the duration of the BA process. All registered I&APs were sent the link upon commencement of the PPP on 27 August 2021.
- If any of the I&APs have difficulty accessing the Final BAR and EMPr, it will be possible for them to request and collect a hardcopy from a location to be determined at that stage. All comments and concerns will be taken into consideration and recorded. All responses to these comments will be presented to the GDARD as part of the Final BAR and EMPr.
- Registered I&APs will be informed of the submission of the final BAR as well as GDARD's decision.

### **Notification of the Decision Made by the GDARD**

- Once the GDARD has made a decision on the final BAR and EMPr, an email will be sent to each I&AP notifying them of the decision, as well as the link to the EA issued by GDARD. If the I&AP cannot access the EA online, they must contact the EAP who will use one of the following methods to ensure the I&AP receives the document:
  1. e-mail
  2. ERM website
- Landowners and neighbouring land occupiers were informed via email and verbal communication during the initial public participation phase and site visit.
- Notification letters were provided to landowners and occupiers of land within 100m of the proposed site on 27 August 2021.

- The ward councillor was notified via email and telephonic conversation. See *Appendix B*.
- The municipal authority (City of Joburg Metropolitan Municipality) has been informed via email. See *Appendix B*.
- The following organs of state have been notified of the availability of the DBAR and Final BAR via email:
  - City of Johannesburg Metropolitan Municipality;
  - South African National Heritage Resource Agency (SAHRA);
  - Gauteng Provincial Heritage Resource Agency (PHRA-G);
  - Gauteng Department of Roads and Transport (GDRT);
  - Department of Water and Sanitation (Gauteng); and
- In addition the Fuel Retailers Association (FRA) has been notified of the availability of the DBAR and Final BAR for comment

## 2. LOCAL AUTHORITY PARTICIPATION

**Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.**

Was the draft report submitted to the local authority for comment?

YES NO

If yes, has any comments been received from the local authority?

YES NO

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

All comments received were compiled and addressed in the Comments and Response Report to be submitted to the Department.

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

## 3. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

All comments received were compiled and addressed in the Comment and Response Report to be submitted to the Department.

If "NO" briefly explain why no comments have been received

## 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

## 5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 – Copy of the register of I&As

Appendix 8– Public Participation Plan Sent to the Department

# SECTION D: RESOURCE USE AND PROCESS DETAILS

**Note:** Section D is to be completed for the proposal and alternative(s) (if necessary)

## Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives

"insert No. of duplicates"

times

(complete only)

when appropriate)

Section D Alternative No.

"insert alternative number"

(complete only when appropriate for above)

## 1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

### Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
-----	----

If yes, what estimated quantity will be produced per month?

30 m<sup>3</sup>

Solid construction waste includes:

- soil material from excavations;
- general refuse from site activities; and
- excess building materials and supplies.

The quantity of waste produced from construction activities is estimated at 30 m<sup>3</sup> based on the construction of other Shell service stations of a similar size.

How will the construction solid waste be disposed of (describe)?

General solid waste that will be produced during construction of the service station includes:

- Domestic waste e.g. paper, plastic, glass

All solid waste generated during the construction activities will be separated in designated recycling bins. These bins will be collected by the Municipality and disposed/recycled at the local landfill site.

- Soil

Excavated soil from the UST excavations and service station earth works will be stockpiled on site. If the material is suitable for backfill, it will be utilized to backfill the UST excavations.

- Surplus Construction Materials`

Un-utilised construction materials will be removed once construction has ended, e.g. crushed stone may not be left or randomly strewn around the site.

- Hazardous Waste Materials

Solid hazardous materials that require disposal (e.g. primer, cement) will be disposed of at a registered hazardous landfill site. These materials will be removed by a licensed Hazardous Waste Disposal Contractor (HWDC) that is registered on the Gauteng Department's Waste Information System. Safe disposal certificates will be obtained and a record of these maintained by Shell.

Where will the construction solid waste be disposed of (describe)?

Non-hazardous solid construction waste will be disposed of by an appointed waste removal contractor to the Goudkopies landfill site. Should insufficient space be available, waste will be disposed at another Pikitup landfill site which may include the Ennerdale, Linbro Park, Marie Louise and Robinson Deep landfill sites.

Will the activity produce solid waste during its operational phase?

YES	NO
-----	----

If yes, what estimated quantity will be produced per month?

+/-5 m<sup>3</sup>

How will the solid waste be disposed of (describe)?

Solid waste produced during the operational phase of the service station will include domestic refuse such as plastic, paper, cans etc. This will be disposed of via the municipal waste stream and collection services.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity? 

YES	NO
-----	----

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?  

Goudkopies landfill site
--------------------------

**Note:** If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

YES	NO
-----	----

  
 If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO
-----	----

  
 If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

- Used oil will be collected and recycled by the Rose Foundation, a South African non-profit organisation which manages environmentally acceptable collection, storage and recycling of used lubricating oil. There is also a subcontractor that collects cans.
- Excess and/or waste construction materials will be reused by the contractor where possible, to ensure that minimal amounts are disposed of at the Landfill.
- The appointed retailer will endeavour to facilitate recycling at the service station during its operation.

**Liquid effluent (other than domestic sewage)**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

Effluent during operation of the site includes stormwater and water from washing the forecourt. This effluent will be separated into "clean" and "dirty" water through containment slabs. Containment slabs will be installed on the forecourt and at the filler points, where there is the potential for stormwater to be contaminated by fuel spills. Water from these slabs will be directed to a SANS compliant on-site oil water separator with a proposed capacity of 5,000 l and then discharged into the Municipal Stormwater system.

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

YES	NO
30 m <sup>3</sup>	
YES	NO

Will the activity produce any effluent that will be treated and/or disposed of on site? 

Yes	NO
-----	----

  
 If yes, what estimated quantity will be produced per month? 

N/A	
-----	--

If yes describe the nature of the effluent and how it will be disposed.

N/A

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility? 

YES	NO
-----	----

  
 The hazardous contents of the separator will be removed by a licenced waste disposal contractor such as Spill Tech or Enviroserv. This contract will only be awarded if the construction and operation of the site is authorised

If yes, provide the particulars of the facility:

Facility name: 

A dedicated refuse yard facility at a position internal to the site will be allocated. This facility must be constructed to comply with the Local Municipality's requirements.	
--	--

  
 Contact person: 

--	--

  
 Postal address: 

--	--

  
 Postal code: 

--	--

  
 Telephone: 

	Cell: <table border="1" style="width: 100%;"><tr><td></td></tr></table>	

  
 E-mail: 

	Fax: <table border="1" style="width: 100%;"><tr><td></td></tr></table>	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

As effluent from the containment slabs may include hydrocarbons from fuel, no reuse or recycling is possible.

**Liquid effluent (domestic sewage)**

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

If yes, what estimated quantity will be produced per month?

YES	NO
30m <sup>3</sup>	

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

YES	NO
-----	----

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
-----	----

If yes describe how it will be treated and disposed off.

### Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
YES	NO

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Construction phase activities will result in the release of vehicle and machinery emissions into the atmosphere. However, the levels released are expected to be minimal and management measures for the maintenance of vehicles/machinery have been included in the Environmental Management Programme (EMPr).

Further, emissions in the immediate vicinity of the site include dust. This will be generated by:

- Clearing of vegetation and levelling of the site;
- Excavation and stockpiling of soil material; and
- Transporting of sand / building material to construction site.

The impact of dust emissions is described in the Impact Assessment section and dust minimizing techniques are described in the EMPr.

Volatile Organic Compounds (VOCs) may be emitted from fuels stored on site during the operational phase. These are potentially hazardous to human health in large amounts. Small amounts of VOCs may be emitted during the filling of USTs, from the breather pipes or minor spills during the dispensing of fuel. These levels of emissions are not considered to be significant.

## 2. WATER USE

Indicate the source(s) of water that will be used for the activity

municipal	Directly from water board	groundwater	river, stream, dam or lake	other	the activity will not use water
-----------	---------------------------	-------------	----------------------------	-------	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

NA liters
-----------

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs?

YES	NO
-----	----

If yes, list the permits required

If yes, have you applied for the water use permit(s)?

YES	NO
-----	----

If yes, have you received approval(s)? (attached in appropriate appendix)

YES	NO
-----	----

## 3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Municipality
--------------

If power supply is not available, where will power be sourced from?

Diesel generator
------------------

#### 4. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The following activities will be undertaken in order to ensure energy efficiency:

- Environmentally friendly refrigerants
- provision for Stage 1 vapour recovery
- LED lighting
- solar water heating
- rainwater harvesting
- outdoor lighting will be downward facing and low wattage;
- lights used for non-security purposes will be energy efficient for example, light emitting diode (LED) lights;
- energy efficient heaters and air conditioners will be used in the convenience store and fast food restaurant; and hot water geysers will be insulated to reduce energy loss.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Alternative energy sources have not been taken into account in the design of the proposed service station.



# SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

## 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

All comments received were compiled and addressed in the Comment and Response Report to be submitted to the Department.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

All comments received we compiled and addressed in the Comment and Response Report to be submitted to the Department.

## 2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

The purpose of the impact assessment is to identify and evaluate the likely significance of the potential impacts on identified receptors and resources according to defined assessment criteria, to develop and describe measures that will be taken to avoid, minimize, reduce or compensate for any potential adverse environmental effects and to report the significance of the residual impacts that remain following mitigation. The methodology for detailed impact assessment is described below.

#### i. Impact Identification and Characterisation

An 'impact' is any change to a resource or receptor brought about by the presence of a Project component or by a Project-related activity. In this assessment, the impacts are described in terms of their characteristics, including the impact's type and the impact's spatial and temporal features (namely extent, duration, scale and frequency). While an impact assessment typically focuses on the negative impacts, an impact can also be positive. The definitions of the terms used in this BA are described in **Error! Reference source not found.1**.

**Table 1 Impact Characteristics**

Characteristic	Definition	Terms
Type	A descriptor indicating the relationship of the impact to the Project (in terms of cause and effect).	<p><b>Direct</b> - Impacts that result from a direct interaction between a planned Project activity and the receiving environment/receptors (ie, between occupation of a site and the pre-existing habitats or between an effluent discharge and receiving water quality).</p> <p><b>Indirect</b> - Impacts that result from other activities that are encouraged to happen as a consequence of the Project (ie, in-migration for employment placing a demand on resources).</p> <p><b>Induced</b> - Impacts that result from other activities (which are not part of the Project) that happen as a consequence of the Project.</p> <p><b>Cumulative</b> - Impacts that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and/or receptors as the Project.</p>
Duration	The time period over which a resource / receptor is affected.	<p><b>Temporary</b> - (period of less than 3 years -negligible/ pre-construction/ other).</p> <p><b>Short term</b> - (period of less than 5 years ie, production ramp up period).</p> <p><b>Long term</b> - impacts that will continue for the life of the Project, but ceases when the Project stops operating.</p> <p><b>Permanent</b> - (a period that exceeds the life of plant – ie, irreversible.).</p>
Extent	The reach of the impact (ie, physical distance an impact will extend to)	<p><b>On-site</b> - impacts that are limited to the Project site.</p> <p><b>Local</b> - impacts that are limited to the Project site and adjacent properties.</p> <p><b>Regional</b> - impacts that are experienced at a regional scale.</p> <p><b>National</b> - impacts that are experienced at a national scale.</p> <p><b>Trans-boundary/ International</b> - impacts that are experienced outside of South Africa.</p>
Scale	Quantitative measure of the impact ie, the size of the area damaged or impacted, the fraction of a resource that is lost or affected, etc.).	Quantitative measures as applicable for the feature or resources affects. No fixed designations as it is intended to be a numerical value.

#### ii. Determining Impact Magnitude

Once impacts are characterised they are assigned a 'magnitude'. Magnitude is a function of some combination (depending on the resource/ receptor in question) of the following impact characteristics:

- Extent;
- Duration; and
- Scale.

Magnitude (from Small to Large) is a continuum. Determination of an impacts magnitude involves to some degree quantification but also professional judgement and experience. Each impact is evaluated on a case-by-case basis and the rationale for each determination is described. Magnitude designations for negative effects are Negligible, Small, Medium and Large. The magnitude designations themselves are universally consistent, but the definition for the designations varies by

issue. In the case of a positive impact, no magnitude designation has been assigned as it is considered sufficient for the purpose of the impact assessment to indicate that the Project is expected to result in a Positive impact.

### ***Determining Magnitude for Biophysical Impacts***

For biophysical impacts, the semi-quantitative definitions for the spatial and temporal dimension of the magnitude of impacts used in this assessment are provided below.

**Large Magnitude Impact** affects an entire area, system (physical), aspect, population or species (biological) and at sufficient magnitude to cause a significant measurable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) or a decline in abundance and/ or change in distribution beyond which natural recruitment (reproduction, immigration from unaffected areas) would not return that population or species, or any population or species dependent upon it, to its former level within several generations (physical and biological). A Large Magnitude impact may also adversely affect the integrity of a site, habitat or ecosystem.

**Medium Magnitude Impact** affects a portion of an area, system, aspect (physical), population or species (biological) and at sufficient magnitude to cause a measurable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) and may bring about a change in abundance and/or distribution over one or more plant/animal generations, but does not threaten the integrity of that population or any population dependent on it (physical and biological). A Medium magnitude impact may also affect the ecological functioning of a site, habitat or ecosystem but without adversely affecting its overall integrity. The area affected may be local or regional.

**Small Magnitude Impact** affects a specific area, system, aspect (physical), group of localised individuals within a population (biological), and at sufficient magnitude, resulting in a small increase in measured concentrations (to be compared with legislated or international limits and standards specific to the receptors) (physical). This will be over a short time period (one plant/ animal generation or less but does not affect other trophic levels or the population itself), and in a localised area.

**Negligible Magnitude Impacts** are impacts that will result in changes to the environment that may be immeasurable, undetectable or within the range of normal natural variation.

### ***Determining Magnitude for Socio-Economic Impacts***

For socio-economic impacts, the magnitude considers the perspective of those affected by taking into account the likely perceived importance of the impact, the ability of people to manage and adapt to change and the extent to which a human receptor gains or loses access to, or control over socio-economic resources resulting in a positive or negative effect on their well-being.

The quantitative elements are included into the assessment through the designation and consideration of scale and extent of the impact.

#### **iii. Determining Receptor Sensitivity**

In addition to characterising the magnitude of impact, the other principal step necessary to assign significance for a given impact is to define the sensitivity of the receptor. There are a range of factors to be taken into account when defining the sensitivity of the receptor, which may be physical, biological, cultural or human. Where the receptor is physical (for example, a water body) its current quality, sensitivity to change, and importance (on a local, national and international scale) are considered.

Where the receptor is biological or cultural (ie, the marine environment or a coral reef), its importance (local, regional, national or international) and sensitivity to the specific type of impact are considered. Where the receptor is human, the vulnerability of the individual, community or wider societal group is considered. As in the case of magnitude, the sensitivity designations themselves are universally consistent, but the definitions for these designations will vary on a resource/receptor basis. The universal sensitivity of receptor is Low, Medium and High.

For ecological impacts, sensitivity is assigned as Low, Medium or High based on the conservation importance of habitats and species. For the sensitivity of individual species, **Error! Reference source not found.** presents the criteria for deciding on the value or sensitivity of individual species.

For socio-economic impacts, the degree of sensitivity of a receptor is defined as the level of resilience (or capacity to cope) with sudden social and economic changes. **Error! Reference source not found.** and **Error! Reference source not found.** present the criteria for deciding on the value or sensitivity of biological and socioeconomic receptors.

**Table 2 Biological and Species Value/Sensitivity Criteria**

Value / Sensitivity	Low	Medium	High
<b>Criteria</b>	Not protected or listed as common / abundant; or not critical to other ecosystem functions (e.g. key prey species to other species).	Not protected or listed but may be a species common globally but rare in South Africa with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Specifically protected under South African legislation and/or international conventions e.g. CITIES Listed as rare, threatened or endangered e.g. IUCN

*Note: The criteria are applied with a degree of caution. Seasonal variations and species lifecycle stage will be taken into account when considering species sensitivity. For example, a population might be deemed as more sensitive during the breeding/spawning and nursery periods. This table uses listing of species ie, IUCN) or protection as an indication of the level of threat that this species experiences within the broader ecosystem (global, regional, local). This is used to provide a judgement of the importance of affecting this species in the context of Project-level changes.*

**Table 3 Socio-Economic Sensitivity Criteria**

Sensitivity	Low	Medium	High
<b>Criteria</b>	Those affected are able to adapt with relative ease and maintain pre-impact status.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support.	Those affected will not be able to adapt to changes and continue to maintain-pre impact status.

#### iv. Reversibility and Loss of Resource

As required by the South African EIA Regulations the following additional items should be considered in the assessment of impacts and risks identified:

- The degree to which the impact and risk can be reversed (this is rated on a scale of High, Medium, or Low);
- The degree to which the impact and risk may cause irreplaceable loss of resources (this is rated on a scale of High, Medium, or Low).

#### v. Assessing Significance

Once magnitude of impact and sensitivity of a receptor have been characterised, the significance can be determined for each impact. The impact significance rating for planned activities will be determined, using the matrix provided in **Error! Reference source not found.**

Magnitude of Impact		Sensitivity/ Vulnerability/ Importance of Resource/ Receptor		
		Low	Medium	High
	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

**Figure 5 Impact Significance**

The matrix applies universally to all resources/receptors, and all impacts to these resources/receptors, as the resource/receptor-specific considerations are factored into the assignment of magnitude and sensitivity/vulnerability/ importance designations that enter into the matrix. **Error! Reference source not found.** provides a context for what the various impact significance ratings signify.

#### Box 1 Context of Impact Significance

An impact of **Negligible** significance is one where a resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be 'imperceptible' or is indistinguishable from natural background variations.

An impact of **Minor** significance is one where a resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and/or the resource/receptor is of low sensitivity/ vulnerability/ importance. In either case, the magnitude should be well within applicable standards.

An impact of **Moderate** significance has an impact magnitude that is within applicable standards, but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. Clearly, to design an activity so that its effects only just avoid breaking a law and/or cause a major impact is not best practice. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that impacts of moderate significance have to be reduced to minor, but that moderate impacts are being managed effectively and efficiently

An impact of **Major** significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. An aim of IA is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long-term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (ie, ALARP has been applied). An example might be the visual impact of a facility. It is then the function of regulators and stakeholders to weigh such negative factors against the positive ones, such as employment, in coming to a decision on the Project.

#### vi. Mitigation Potential and Residual Impacts

A key objective of an EIA process is to identify and define socially, environmentally, technically acceptable, and cost feasible measures to manage and mitigate potential impacts. Mitigation measures are developed to avoid, reduce, remedy or compensate for potential negative impacts, and to enhance potential environmental and social benefits.

The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in Box 2. The priority is to first apply mitigation measures to the source of the impact (ie, to avoid or reduce the magnitude of the impact from the associated Project activity), and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets (ie, to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude).

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures. The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in Box 2.

#### Box 2 Mitigation Hierarchy

**Avoid at Source; Reduce at Source:** avoiding or reducing at source through the design of the Project ie, avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity.

**Abate on Site:** add something to the design to abate the impact ie, pollution control equipment.

**Abate at Receptor:** if an impact cannot be abated on-site then control measures can be implemented off-site ie, traffic measures.

**Repair or Remedy:** some impacts involve unavoidable damage to a resource ie, material storage areas) and these impacts require repair, restoration and reinstatement measures.

**Compensate in Kind; Compensate through Other Means** where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate ie, financial compensation for degrading agricultural land and impacting crop yields.

#### vii. Residual Impact Assessment

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures.

#### viii. Cumulative Impacts

A cumulative impact is one that arises from a result of an impact from the Project interacting with an impact from another activity to create an additional impact. How the impacts and effects are assessed is strongly influenced by the status of the other activities (ie, already in existence, approved or proposed) and how much data is available to characterise the magnitude of their impacts.

The approach to assessing cumulative impacts is to screen potential interactions with other projects on the basis of:

- Projects that are already in existence and are operating;
- Projects that are approved but not as yet built or operating; and
- Projects that are a realistic proposition but are not yet built.

#### ix. Assessing Significance of Risks for Accidental / Unplanned Events

The methodology used to assess the significance of the risks associated with unplanned events differs from the impact assessment methodology set out in Section 7 of this Report. Risk significance for unplanned events is based on a combination of the likelihood (or frequency) of incident occurrence and the consequences of the incident should it occur. The assessment of likelihood and consequence of the event also includes the existing control and mitigation measures for this project.

The assessment of likelihood takes a qualitative approach based on professional judgement, experience from similar projects and interaction with the technical team.

The assessment of consequence is based on specialists' input and their professional experience gained from similar projects.

Definitions used in the assessment for likelihood and consequence are set out in Box 3.

#### Box 03 Risk Significance Criteria for Accidental / Unplanned Events

##### Likelihood

Likelihood describes the probability of an event or incident actually occurring or taking place. It is considered in terms of the following variables:

- **Low:** the event or incident is reported in the telecommunication industry, but rarely occurs;
- **Medium:** the event or incident does occur but is not common; and/or
- **High:** the event or incident is likely to occur several times during the project's lifetime.

##### Consequence

The potential consequence of an impact occurring is a combination of those factors that determine the magnitude of the unplanned impact (in terms of the extent, duration and intensity of the impact). Consequence in unplanned events is similar to significance (magnitude x sensitivity) of planned events and is classified as either a:

- **Minor consequence:** impacts of Low intensity to receptors/resources across a local extent, that can readily recover in the short term with little or no recovery/remediation measures required;
- **Moderate consequence:** impacts of Low to Medium intensity across a local to regional extent, to receptors/resources that can recover in the short term to medium term with the intervention of recovery/remediation measures; or
- **Major consequence:** exceeds acceptable limits and standards, is of Medium to High intensity affecting receptors/resources across a regional to international extent that will recover in the long term only with the implementation of significant/remediation measures.

Once a rating is determined for likelihood and consequence, the risk matrix in Table 4 is used to determine the risk significance for unplanned events. The prediction takes into account the mitigation and/or risk control measures that are already an integral part of the project design, and the management plans to be implemented by the project.

Table 4 Accidental Events Risk Significance

Risk Significance Rating				
Likelihood		Low	Medium	High
Consequence	Minor	Minor	Minor	Moderate
	Moderate	Minor	Moderate	Major
	Major	Moderate	Major	Major

It is not possible to completely eliminate the risk of unplanned events occurring. However, the mitigation strategy to minimise the risk of the occurrence of unplanned events is outlined in **Error! Reference source not found..**

#### Box 4 Mitigation Strategy for Accidental Events

**Control:** aims to prevent or reduce the risk of an incident happening or reduce the magnitude of the potential consequence to As Low as Reasonably Possible (ALARP) through:

- Reducing the likelihood of the event ie, preventative maintenance measures, emergency response procedures and training);
- Reducing the consequence ; and
- A combination of both of these.

Recovery/ remediation: includes contingency plans and response

- Emergency Response Plans and
  - Tactical Response Plans
- 

**x. Assumptions and Limitations**

Impact Assessment is a process that aims to identify and anticipate possible impacts based on past and present baseline information. As the EIA deals with the future there is, inevitably, some uncertainty about what will actually happen in reality. Impact predictions have been made based on field surveys and with the best data, methods and scientific knowledge available at this time. However, some uncertainties could not be entirely resolved. Where significant uncertainty remains in the impact assessment, this is acknowledged and the level of uncertainty is provided.

In line with best practice, this EIA process has adopted a precautionary approach to the identification and assessment of impacts. Where it has not been possible to make direct predictions of the likely level of impact, limits on the maximum likely impact have been reported and the design and implementation of the Project (including the use of appropriate mitigation measures) will ensure that these are not exceeded. Where the magnitude of impacts cannot be predicted with certainty, the team of specialists has used professional experience to judge whether a significant impact is likely to occur or not. Throughout the assessment, this conservative approach has been adopted to the allocation of significance.

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.

Proposal – Construction Phase						
Potential Impact	Significance Rating of Impacts:		Proposed Mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
Potential Biophysical Impacts						
<b><u>Air Quality</u></b> Air quality in the immediate vicinity of the site may be polluted by various emissions and dust generating activities, including: <ul style="list-style-type: none"><li>• Clearing of vegetation and levelling of the site;</li><li>• Excavation and stockpiling of soil material;</li><li>• Transporting of sand / building material to construction site; and</li><li>• Vehicle emissions (considering that construction is in an open space, emissions will disperse naturally and will therefore not lead to an adverse change in the environment nor negatively affect nearby residents, patrons and pedestrians.)</li></ul> This impact would occur for the duration of the construction period (5-6 months). The dust may occur intermittently between 8am – 5pm during weekdays and may be a nuisance to the surrounding pedestrians, motorists and residents. The levels of dust generated by construction activities are not expected to adversely affect health or visibility.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>• Dust suppression methods, such as wetting with water, should be applied where there are large tracts of exposed surfaces and in high wind conditions.</li><li>• Dust generating activities (i.e. excavation, stockpiling) should be avoided in high wind conditions.</li><li>• The use of delivery trucks during construction should be limited to the designated areas and only trucks that comply with the relevant legislation should be used.</li><li>• Building material and sand should be covered during transport to and from the site.</li><li>• Soil and sand stockpiles should be covered with a tarpaulin.</li><li>• All construction vehicles must be appropriately maintained to minimise exhaust emissions</li><li>• A grievance procedure must be established whereby complaints of dust can be received, recorded and responded to appropriately.</li><li>• Construction workers and personnel will wear dust protection masks when required.</li></ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Negligible	
<b><u>Groundwater Contamination</u></b> There was no direct evidence of a shallow groundwater table in the profile	<b>Extent</b>	Regional	<ul style="list-style-type: none"><li>• Any significant spills or leak incidents must be reported in terms of the NEMA and NEMWA.</li></ul>	<b>Extent</b>	Regional	
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	



during the geotechnical investigation conducted by Schwartz Tromp and Associates in November and December of 2005. Groundwater contamination could occur during construction activities from machinery leaking fuel and oil.	<b>Likelihood</b>	Unlikely	<ul style="list-style-type: none"> <li>An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>Accidental spills that may occur must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor to a licenced disposal facility.</li> </ul>	<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Negligible		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Negligible		<b>Significance post Mitigation</b>	Negligible	
<b><u>Loss of Conservation Important (CI) plant species</u></b> As per the National Screening Tool report (DEFF, 2020), no CI specimens were identified on the site. The overall plant species theme is medium	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>It is recommended that a floral scan be undertaken in the summer months to determine if any CI species are present on site.</li> <li>Conservation Important (CI) Specimens must be located prior to construction. If CI specimens are within the construction footprint, they must be translocated elsewhere on the same site where they will not be disturbed.</li> <li>Permits to move/relocate the CI specimens need to be obtained from the Gauteng Department of Agriculture and Rural Development (GDARD).</li> <li>The construction footprint must be clearly demarcated, and all activities must be limited to the footprint area.</li> </ul>	<b>Extent</b>	Local	Negligible
	<b>Duration</b>	Permanent		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Negligible		<b>Significance post Mitigation</b>	Negligible	
<b><u>Sensory disturbance of fauna</u></b> Loud noise, vibrations and bright lights from construction activities could cause stress, disorientation or changes in the behaviour or ecology of affected fauna. Taxa that would be most vulnerable to these forms of disturbance include those that are nocturnal, fossorial and which rely heavily on sound communication. Bright lights could affect orientation and foraging by hedgehogs, grass-owls and bullfrogs, which are primarily nocturnal.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>Prior to construction the entire site must be searched for hedgehogs and bullfrogs. Additionally all termataria within the project footprint area should be searched for Striped Harlequin Snakes.</li> <li>All CI species encountered must be relocated to a safer area in the vicinity under the supervision of an appropriately qualified specialist.</li> <li>Construction activities must be limited to day-light hours, especially if construction is not confined to winter, to reduce disturbance of nocturnal fauna including hedgehogs, grass-</li> </ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Minor	

			owls and bullfrogs.			
<b><u>Proliferation of alien and invasive plant species</u></b> Increased vehicle and human activity, disruption of vegetation and soil, and the introduction of building materials may result in a proliferation of alien and invasive plant species. In general, on Site, the study area is largely characterised by alien species. The invasive plants <i>Eucalyptus grandis</i> and <i>Acacia decurrens</i> were found throughout the Site.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>Alien species such as <i>the Eucalyptus grandis</i> and <i>Acacia decurrens</i> must be removed from the Site prior to construction and disposed of correctly (i.e. to a dump site that accepts garden refuse).</li></ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b>Potential Socio-Economic Impacts</b>						
<b><u>Increased Noise Disturbance</u></b> Construction traffic comprises large machinery, heavy vehicles and excavation equipment all of which may result in an increase in noise disturbance during the construction phase. This potential impact would only occur during working hours, namely 08:00 am to 05:00 pm. The increased levels of noise are considered to be a nuisance rather than an adverse impact on the receptors health or well-being.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>The contractor will adhere to local authority by-laws (Gauteng Noise Control Regulations, 1999) relating to noise control.</li><li>Construction activities will be restricted to regular working hours, i.e.: Monday to Friday (8am- 5pm).</li><li>Mechanical equipment with lower sound power levels will be selected to ensure that the permissible occupation noise is not exceeded.</li><li>Equipment will be fitted with silencers as far as possible to reduce noise.</li><li>All equipment will be adequately maintained and kept in good working order to reduce noise.</li><li>Neighbouring landowners should be informed prior to any very noisy activities being undertaken, e.g. high intensity drilling.</li><li>A grievance procedure must be established whereby noise complaints can be received, recorded and responded to appropriately.</li><li>Construction workers and personnel will wear hearing protection when required.</li></ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b><u>Increased Heavy Vehicle Traffic on Aerodrome, Chris Hani and</u></b>	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>Heavy vehicles must have mobility on</li></ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	

<b>Southgate Roads</b> The construction activities will be associated with vehicles and machinery coming onto and exiting the site via Aerodrome, Chris Hani and Southgate Roads.	<b>Intensity</b>	Low	Aerodrome, Chris Hani and Southgate Roads at designated times, thus not adversely affecting rush hour traffic. <ul style="list-style-type: none"> <li>Co-ordination of movement of vehicles on and off site to reduce risks and prevent congestion on roads in the vicinity of the site.</li> <li>Appoint a signalman during large vehicle movement to and from site.</li> <li>Erect signage so that road users are aware of site works.</li> <li>Heavy construction vehicles travelling to the site should be limited to outside of peak traffic times.</li> </ul>	<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Minor	
<b>Health and Safety</b> The construction of the service station carries potential health and safety impacts. Moving vehicles, open excavations, suspended loads, loading and unloading of materials all pose risks. The receptor is limited to the construction workforce as the construction site will be fenced and access restricted.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The construction site must be fenced off to prohibit unauthorised access and site access must be strictly controlled.</li> <li>All employees, contractors and sub-contractors to wear appropriate PPE.</li> <li>Open excavations must be clearly marked and barricaded.</li> <li>All employees, contractors and sub-contractors must comply with Shell's Health and Safety Policy.</li> <li>Appropriate health and safety signage must be displayed on site.</li> </ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Low		<b>Sensitivity of Resource /Receptor</b>	Low	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b>Local Employment Opportunities</b> Local labour employment will feature as one of the major benefits to local economic development albeit for a short period. Civil works is obliged to employ a certain percentage of local labour as part of their commitment toward the Construction Charter principles. The number of local employment opportunities likely to be generated from this development during the construction period is unknown at this stage. In all likelihood the nearby, marginalised area of Diepkloof is likely to see the greatest benefit.	<b>Extent</b>	Regional	The following measures should be implemented to ensure that this positive impact is enhanced: <ul style="list-style-type: none"> <li>Appointed contractors must comply with Shell's employment equity policy.</li> <li>As far as possible, local employment must be used to fill any vacant construction jobs.</li> <li>No employment applications may take place at the entrance to the site, rather formal employment channels must be used</li> </ul>	<b>Extent</b>	Regional	Positive (Moderate)
	<b>Duration</b>	Short-term		<b>Duration</b>	Short-term	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Definite	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate (+)		<b>Significance post Mitigation</b>	Moderate (+)	
<b>Crime Rate</b> There are very few 'pull-factors' in terms	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The development area will be</li> </ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Short-term		<b>Duration</b>	Short-term	

of the attraction of criminals to the development area. Workers will arrive and depart daily as no construction camps will be in the development area. Residential homes in the surrounds are therefore unlikely to see an increase in crime as a direct result of the service station construction.	<b>Intensity</b>	Low	guarded day and night, 7 days a week.	<b>Intensity</b>	Low	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b><u>Increase in informal and formal procurement of goods and services leading to increased local economic activity</u></b> Small scale vending ventures are likely to experience an increase in the trade of small everyday goods. This is not a sustained activity as it will probably only service the construction workers for the period they are on site.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>Procurement of goods and services must be in accordance with Shell's employment equity policy.</li> </ul>	<b>Extent</b>	Local	Positive (Minor)
	<b>Duration</b>	Short-term		<b>Duration</b>	Short-term	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor (+)		<b>Significance post Mitigation</b>	Minor (+)	
<b><u>Loss of Cultural or Heritage Resources</u></b> According to the DEFF screening tool 2020, the site has a medium sensitivity with regards to archaeological and cultural heritage theme sensitivity.	<b>Extent</b>	Site Specific	<ul style="list-style-type: none"> <li>If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments and charcoal/ash concentrations), unmarked human burials, fossils or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Tel: 021 462 4502) must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings.</li> <li>If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation might be necessary.</li> </ul>	<b>Extent</b>	Site Specific	Negligible
	<b>Duration</b>	Permanent		<b>Duration</b>	Permanent	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Negligible		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Negligible		<b>Significance post Mitigation</b>	Negligible	

Proposal – Operational Phase						
Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
Potential Biophysical Impacts						
<b><u>Air Quality:</u></b> The evaporation of petrol, during operations results in Volatile Organic Compound (VOC) release. This may occur when USTs or vehicles are being filled. However, this will occur in small amounts and will be restricted to the site.	Extent	Local	<ul style="list-style-type: none"><li>USTs to be fitted to vent pipes which must be installed such that they face away from the neighbouring areas.</li></ul>	Extent	Local	Minor
	Duration	Short term		Duration	Long term	
	Intensity	Negligible		Intensity	Negligible	
	Likelihood	Possible		Likelihood	Unlikely	
	Magnitude	Small		Magnitude	Negligible	
	Sensitivity of Resource /Receptor	Medium		Sensitivity of Resource /Receptor	Medium	
	Significance prior to Mitigation	Minor		Significance post Mitigation	Negligible	
<b><u>Groundwater Contamination:</u></b> Groundwater contamination by hydrocarbons is possible due to leaking storage tanks	Extent	Regional	<u>Design Measures:</u> <ul style="list-style-type: none"><li>USTs must be fitted with automatic leak detectors that alert management to a leak.</li><li>USTs must have corrosion protection.</li><li>Monitoring wells will be installed within the UST containment area, at all four corners of the containment area. These wells must be inspected on a monthly basis so that leaks can be detected early.</li><li>Fuel dispenser pumps must be located on a hardened surface (containment slab) so that potential spills do not easily penetrate the soil.</li><li>A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the USTs.</li><li>Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices.</li></ul>	Extent	Regional	Major
	Duration	Permanent		Duration	Permanent	
	Intensity	High		Intensity	High	
	Likelihood	Possible		Likelihood	Unlikely	
	Magnitude	Medium		Magnitude	Small	
	Sensitivity of Resource /Receptor	High		Sensitivity of Resource /Receptor	High	
	Significance prior to Mitigation	Major		Significance post Mitigation	Moderate	

			<p><u>Monitoring Measures:</u></p> <ul style="list-style-type: none"> <li>The USTs, pipelines and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity.</li> <li>The oil/water separator must be inspected regularly to ensure that it is functioning at all times.</li> <li>Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch.</li> <li>All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing.</li> <li>Fuel stock must be monitored on a daily basis and these records must be kept on site.</li> <li>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.</li> </ul> <p><u>Remediation Measures:</u></p> <ul style="list-style-type: none"> <li>Any significant spills or leak incidents must be reported in terms of the NEMA and NEMWA.</li> <li>The accumulated contents of the oil/water separator must be removed by an accredited company.</li> <li>An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>Accidental spills that may occur on the forecourt must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor.</li> </ul>			
<p><b>Surface Water Contamination:</b> Surface water sources may be contaminated by hydrocarbons due to surface spillage and runoff from the</p>	<b>Extent</b>	Local	<p><u>Design Measures:</u></p> <ul style="list-style-type: none"> <li>Fuel dispenser pumps must be located on a hardened surface (containment slab) to contain</li> </ul>	<b>Extent</b>	Regional	Minor
	<b>Duration</b>	Medium term		<b>Duration</b>	Long term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	

forecourt, following rains or hosing. The separation of “clean” and “dirty” stormwater at the site through the installation of containment slabs will minimize the potential of this impact on downstream watercourses. The nearest surface water course is the Hennopsrivier which is approximately 61km north of the site	<b>Magnitude</b>	Medium	<p>spillages.</p> <ul style="list-style-type: none"> <li>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.</li> <li>A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the USTs.</li> <li>The design of the stormwater management system should be based on sustainable urban drainage systems (SUDS) and water sensitive Urban Design approaches (WSUDS) which enhance natural drainage through permeable surfacing and which integrate landscaping with stormwater in line with best practice stormwater management.</li> <li>No “dirty” water i.e. from the containment slabs must be allowed to enter the downstream watercourses.</li> </ul> <p><u>Monitoring Measures:</u></p> <ul style="list-style-type: none"> <li>A stormwater management plan must be implemented and regularly monitored to ensure effectiveness.</li> <li>The oil/water separator must be inspected regularly to ensure that it is functioning at all times.</li> <li>Water discharged from the oil/water separator must be monitored to ensure that it meets the required standard.</li> <li>Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch.</li> <li>All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing.</li> </ul> <p><u>Remediation Measures:</u></p> <ul style="list-style-type: none"> <li>Any significant spills or leak incidents must be reported in terms of the NEMA and NEMWA.</li> </ul>	<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	



			<ul style="list-style-type: none"> <li>The accumulated contents of the oil/water separator must be removed by an accredited company.</li> <li>An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>Accidental spills that may occur on the forecourt must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor.</li> </ul>			
<b>Increased stormwater run-off</b> Hardened surfaces will increase stormwater run-off which could affect the downstream water system, and habitat along this system. Given the small extent of the proposed development footprint and the installation of a stormwater attenuation pond, this impact was assigned minor significance prior to mitigation. The nearest surface water course is the Hennopsrivier which is approximately 61km north of the site.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The stormwater management plan must be implemented that drains all runoff from the site to the attenuation pond and then to the municipal stormwater channel.</li> <li>The design of the stormwater management system should be based on sustainable urban drainage systems (SUDS) and water sensitive Urban Design approaches (WSUDS) which enhance natural drainage through permeable surfacing and which integrate landscaping with stormwater in line with best practice stormwater management.</li> <li>The stormwater management system must be regularly monitored to ensure effectiveness.</li> </ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Permanent		<b>Duration</b>	Permanent	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b>Proliferation of alien and invasive plant species</b> An increase in vehicle and human activity around the service station could have a significant adverse impact on locally-occurring CI flora if alien invasive flora out-competes local indigenous vegetation. Considering, however, that the proposed development would represent one of many contributing developments/factors to the proliferation of alien invasive flora in the Study Area, this impact was rated with Minor significance.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The removal of alien and invasive flora from the landscaped areas of the service station must form part of the operations and maintenance of the site.</li> <li>Landscaping at the site must include indigenous, low maintenance plants, in particular, species of the Endangered Egoli Granite Grassland.</li> </ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	



<b><u>Loss of fauna including observed and potentially occurring CI species</u></b> Collision of fauna with vehicles may result in faunal fatalities. Small, slow-moving, terrestrial and/or nocturnal fauna are especially vulnerable to collision with traffic. These include the hedgehog, grass-owl and bullfrog, which are all reportedly threatened by road traffic (Friedmann & Daly 2004; Barnes 2000; Minter et al. 2004).	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>To reduce faunal roadkill and sensory disturbance, measures (e.g. speed bumps) should be implemented on the access roads to control the speed of vehicles entering and exiting the site.</li></ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Negligible	
<b><u>Sensory disturbance of fauna</u></b> Noise and bright lights when the proposed service station is operational may cause sensory disturbance. Bright lights at night will attract large numbers of insects and insect-predators (e.g. bats, aerial-feeding birds and frogs), which could become vulnerable to collision with traffic in the vicinity of the service station.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>Bright lights should be minimized, hooded and orientated downwards to reduce the disturbance or attraction of fauna to lighting at the station.</li></ul>	<b>Extent</b>	Local	Minor
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	
<b>Potential Socio-Economic Impacts</b>						
<b><u>Noise Disturbance</u></b> During operations, the noise associated with vehicle movement around the service station may increase noise disturbance.  The station will operate 24 hours a day, seven days a week. The site is surrounded by low-density residential houses and agricultural small holdings and in particular a horse stable yard which is directly adjacent.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>A grievance procedure must be established by the Site Manager whereby complaints can be received, recorded and responded to appropriately.</li><li>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.</li><li>Noise levels should comply with the SANS Code of Practice 100103 – 0994 (recommended noise levels)</li><li>Local by-laws for noise levels must</li></ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Permanent		<b>Duration</b>	Permanent	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Negligible	

			be adhered to.			
<b>Health and Safety:</b> Petroleum and diesel products are considered dangerous substances as they are volatile and could potentially ignite under specific circumstances. Therefore, there is a risk of fire or explosion on site, which would pose a threat to on-site employees and surrounding land users and occupiers.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The UST's, underground pipes and dispensing pumps must be monitored regularly for leaks.</li> <li>Staff must be trained adequately to identify and minimise the impacts of leaks, how to deal with fire, identify potential high risk situations and implement the Emergency Response Plan.</li> <li>Fire-fighting facilities must conform to the oil industry standard and be regularly inspected.</li> <li>Firefighting equipment must comply with SANS 1151 (Portable rechargeable fire extinguishers - Halogenated hydrocarbon type extinguishers), and be inspected regularly.</li> <li>Fire extinguishers must be easily accessible.</li> <li>Appropriate health and safety signage must be displayed on site.</li> <li>An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> </ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Negligible	
<b>Increased traffic volume along Aerodrome, Chris Hani and Southgate Roads</b> The customer base of those utilising fuel and convenience store services are likely to increase over time coupled with the bulk delivery of fuel. Since there is an entrance and exit on Southgate Road in addition to the entrance and exit on Chris Hani Road, there are no foreseeable negative impacts from increased traffic volumes.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>Fuel tanker delivery times should be scheduled so that they do not conflict with other deliveries.</li> <li>Speed bumps should be installed along the access road to the site to control the speed of traffic entering the site.</li> </ul>	<b>Extent</b>	Local	Negligible
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Unlikely		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Negligible		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Negligible		<b>Significance post Mitigation</b>	Negligible	
<b>Direct Employment Opportunities</b> It is expected that approximately 40 people will be employed during construction phase, and Approximately 50 people will be employed during the operational	<b>Extent</b>	Regional	<ul style="list-style-type: none"> <li>A formal employment protocol for the recruitment of labour will need to be followed.</li> <li>All recruitment must be in-line with Shell's Employment Equity Policy</li> </ul>	<b>Extent</b>	Regional	Positive (Major)
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Definite	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Medium	

<p>phase of the development, with approximately 100% of the employment positions being made available to previously disadvantaged South Africans.</p> <p>Both skilled and unskilled labour will be afforded employment opportunity. This is a potential spin off benefit to 160-180 people (assuming an income earner is supporting a family of four).</p> <p>In addition to the obvious local economic contribution and household benefit that employment will serve, it will also assist in improving an individual's psycho-social standing (due to improved self-worth, confidence, personal fulfilment, growth and satisfaction).</p> <p>Since the population, development and subsequent traffic volume in Baragwanath and surrounds is expected to increase, there is no evidence to suggest that workers at other garages will lose their jobs due to the prospective opening of the proposed Shell Aerodrome service station and convenience store.</p>	<b>Sensitivity of Resource /Receptor</b>	High	<p>which also promotes the employment of women to ensure that gender equality is attained as defined in the Employment Equity Act No 55 of 1998.</p> <ul style="list-style-type: none"> <li>Where possible, priority should be given to job seekers from the local area.</li> <li>Shell must build the capacity of employees through development plans, technical, health and safety training and provide them with relevant training certificates.</li> </ul>	<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Major (+)		<b>Significance post Mitigation</b>	Major (+)	
	<b>Duration</b>	Permanent		<b>Duration</b>	Permanent	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Definite	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Minor	
<p><b>Property Value</b></p> <p>The presence of a service station may cause a real or perceived decrease in property values in the adjacent area. However, the amenity benefit may be attractive to some neighbouring occupiers.</p>	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>Assuming that the design, functionality and appearance of the development will be environmentally and aesthetically acceptable, no further mitigation is appropriate.</li> </ul>	<b>Extent</b>	Local	Moderate
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Medium	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Moderate	

Alternative 1

(REPEAT THIS TABLE FOR EACH ALTERNATIVE)

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being
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				implemented

No Go

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- Biodiversity verification and report update by Scientific Terrestrial
- Terrestrial Sensitivity Scan
- Outline Scheme Report
- Geotechnical Investigation Report
- Traffic & Access Study
- Heritage Impact Assessment

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

The assessment of the environmental impacts assumes that if recommended mitigation measures are followed, negative impacts to the environment will be minimized.

### 3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

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 decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
Potential Biophysical Impacts						
<b>Air Quality</b> Air quality in the immediate vicinity of the site may be polluted by various emissions and dust generating activities, including: <ul style="list-style-type: none"><li>Excavation and stockpiling of soil material;</li><li>Transporting of sand / building material to demolition site; and</li><li>Vehicle emissions (considering that construction is in an open space, emissions will disperse naturally and will therefore not lead to an adverse change in the environment nor negatively affect nearby residents, patrons and pedestrians).</li></ul> This impact would occur for the duration of the decommissioning period (1-2 months). The dust may occur intermittently between 8am – 5pm during weekdays and may be a nuisance to the surrounding pedestrians, motorists and residents. The levels of dust generated by construction activities are not expected to adversely affect health or visibility.	<b>Extent</b>	Local	<ul style="list-style-type: none"><li>Dust suppression methods, such as wetting with water, must be applied where there are large tracts of exposed surfaces and in high wind conditions.</li><li>Dust generating activities (i.e. excavation, stockpiling) should be avoided in windy conditions.</li><li>The use of delivery trucks during construction should be limited to the designated areas and only trucks that comply with the relevant legislation should be used.</li><li>Building material and sand should be covered during transport to and from the site.</li><li>Soil and sand stockpiles must be covered with a tarpaulin.</li><li>All construction vehicles must be appropriately maintained to minimise exhaust emissions.</li></ul>	<b>Extent</b>	Local	Should the proposed mitigation measures not be implemented, the following impacts are likely to occur: <ul style="list-style-type: none"><li>Dust emissions will negatively impact the immediate vicinity of the site. This will be a nuisance to nearby residents, pedestrians, motorists or workers on the site.</li><li>Vehicle emissions would be dispersed naturally as the site is in an open space and therefore should not have an adverse effect on the environment and nearby residents.</li></ul>
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Negligible	

Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
<p><b>Groundwater Contamination</b> The geotechnical survey done by Schwartz Tromp and Associates in 2005 indicates that there was no direct evidence of a shallow groundwater table in the profile.</p> <p>However, the presence of ferricrete in the profile is indicative of a seasonal shallow perched groundwater table beneath portions of the site from time to time.</p> <p>Groundwater contamination could occur during decommissioning from:</p> <ul style="list-style-type: none"> <li>• machinery leaking fuel and oil;</li> <li>• rainfall leaching impacted soil from stockpiles into the water table; and</li> <li>• fuel lines leaking during the removal of the remaining fuel in the USTs.</li> </ul>	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>• Any significant spills or leak incidents must be reported in terms of the NEMA and NEMWA.</li> <li>• An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>• Accidental spills that may occur must be cleaned up immediately using a spill absorbent, which must then be disposed of at a licenced facility.</li> <li>• Use drip trays for any minor on-site mechanical repair work, refuelling and on site storage of vehicles/machinery.</li> <li>• Store all fuel and chemicals within secure and contained areas.</li> <li>• Ensure that backfill material is not impacted before use by the contractor.</li> <li>• The Contractor must notify the appointed Environmental Consultant should groundwater be encountered in the excavations in order to assess if hydrocarbons are present prior to it being disposed of.</li> <li>• Excavated soil must be stockpiled away from sensitive receptors and placed on sheeting surrounded by a soil berm and covered with an additional sheet to prevent intrusion of water.</li> <li>• Establish a material tracking system that tracks materials from 'cradle to grave' (e.g. Safe Disposal Certificates).</li> </ul>	<b>Extent</b>	Local	<p>If the proposed mitigation measures are not implemented, the following impacts may occur:</p> <ul style="list-style-type: none"> <li>• Groundwater contamination may occur as without the use of drip trays, machinery may leak fuel and oil onto the ground which could seep into the ground and contaminate the groundwater.</li> <li>• Any accidental spills if not cleaned up timeously may also contaminate groundwater resources depending on the quantity and nature of such incidents.</li> <li>• Rainfall leaching may impact soil and water resources.</li> <li>• Increase in groundwater contamination will eventually lead to nearby water sources being polluted thereafter impacting the residents in the area.</li> </ul>
	<b>Duration</b>	Temporary		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	

Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
			<ul style="list-style-type: none"> <li>Soil samples must be taken from the base and sides of the UST excavation to determine whether or not the soil has been impacted during the lifespan of the UST.</li> <li>Excavated soil will be screened with a PID to ensure appropriate handling and disposal of soil. Should it be determined that the site has been impacted and the soil and/or groundwater have been contaminated, remediation will be in accordance with the National Environmental Management Waste Act (NEM:WA).</li> </ul>			
<b>Surface Water Contamination</b> The decommissioning activities pose a threat to important hydrological functions in the immediate area if not properly managed. Depending on the stormwater management of the site, this has the potential to significantly impact upon downstream watercourses.  These activities include: <ul style="list-style-type: none"> <li>Stockpiling of material which may wash into stormwater drains.</li> <li>Uncontrolled use of area for ablution facilities</li> <li>Uncontrolled use of area for cleaning of tools, equipment and vehicles</li> <li>Accidental spills of hazardous substances.</li> </ul>	<b>Extent</b>	Regional	<ul style="list-style-type: none"> <li>Any significant spills or leak incidents must be reported in terms of the NEMA and NEMWA.</li> <li>An Emergency Response Plan must be in place for the site; this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>Accidental spills that may occur must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor.</li> <li>Temporary stockpiles must be located away from stormwater drains.</li> <li>All vehicles will be properly maintained to prevent leaks.</li> <li>Any fuel stored on site must be kept in a bunded containment area.</li> <li>Drip trays are to be utilised during daily greasing and re-fuelling of</li> </ul>	<b>Extent</b>	Regional	Should the proposed mitigation measures not be implemented, the following risks are likely to occur with regards to surface water contamination: <ul style="list-style-type: none"> <li>All accidental spills that are not cleaned up immediately using a spill absorbent may eventually be transported by run-off into any nearby watercourses.</li> <li>Any vehicle leaks need to be sorted out immediately as this can be carried as run-off into surface water.</li> <li>Surface water contamination is also a risk as it can cause</li> </ul>
	<b>Duration</b>	Long-term		<b>Duration</b>	Long-term	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Minor	



Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
			machinery and to catch incidental spills and pollutants. <ul style="list-style-type: none"> <li>Regular servicing and maintenance of machinery must be done at an appropriate workshop facility and not on site.</li> <li>Drip trays are to be inspected on a weekly basis for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow.</li> <li>Ablution facilities during decommissioning must be regularly maintained and cleaned out.</li> </ul>			different type of waterborne diseases which are extremely harmful.
<b>Potential Socio-Economic Impacts</b>						
<b>Increased Noise Disturbance</b> Traffic associated with decommissioning comprises large, heavy machinery and vehicles and excavation equipment all of which may result in an increase in noise disturbance during the decommissioning phase. This potential impact would only occur during working hours, namely 08:00 am to 05:00 pm. The increased levels of noise are considered to be a nuisance rather than an adverse impact on the receptors health or well-being.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The contractor will adhere to local authority by-laws relating to noise control.</li> <li>Decommissioning activities will be restricted to regular working hours, i.e.: Monday to Friday (8am- 5pm).</li> <li>Mechanical equipment with lower sound power levels will be selected to ensure that the permissible occupation noise is not exceeded.</li> <li>Equipment will be fitted with silencers as far as possible to reduce noise.</li> <li>All equipment will be adequately maintained and kept in good working order to reduce noise.</li> <li>Neighbouring landowners should be informed prior to any very noisy activities being undertaken,</li> </ul>	<b>Extent</b>	Local	If the proposed mitigation measures are not followed, there may be an increase in noise disturbances coming from the site. The heavy machinery and vehicles, as well as the excavation equipment will result in an increase in noise disturbance to the surrounding residents, vehicles and pedestrians.
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Medium		<b>Intensity</b>	Medium	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Negligible	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	

Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
			e.g.: high intensity drilling. <ul style="list-style-type: none"> <li>A grievance procedure must be established whereby noise complaints can be received, recorded and responded to appropriately.</li> <li>Construction workers and personnel will wear hearing protection when required.</li> </ul>			
<b>Increased Heavy Vehicle Traffic on Southgate Road, Aerodrome Road and Chris Hani Road</b> The decommissioning activities will be associated with vehicles and machinery coming onto and leaving the site via Southgate Road, Aerodrome Road and Chris Hani Road.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>Heavy vehicles must have mobility on these 3 roads at designated times, thus not adversely affecting rush hour traffic.</li> <li>Co-ordination of movement of vehicles on and off site to reduce risks and prevent congestion on roads in the vicinity of the site.</li> <li>Appoint a signman during large vehicle movement to and from site.</li> <li>Erect signage so that road users are aware of site works.</li> </ul>	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>If designated times are not allocated to heavy vehicles then they will adversely affect rush hours traffic.</li> <li>Co-ordination and movement of vehicles need to be properly managed in order to allow for no congestion on the roads in the vicinity of the site.</li> </ul>
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Definite		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Medium		<b>Sensitivity of Resource /Receptor</b>	Medium	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Minor	
<b>Health and Safety</b> The decommissioning of the service station is associated with health and safety risks to personnel and onlookers. Excavations, moving vehicles, suspended loads, loading and unloading of materials all pose risks.	<b>Extent</b>	Local	<ul style="list-style-type: none"> <li>The site must be fenced off to prohibit unauthorised access and site access must be strictly controlled.</li> <li>All employees, contractors and sub- contractors to wear appropriate PPE.</li> <li>Open excavations must be clearly marked and barricaded.</li> <li>All employees, contractors and sub- contractors must comply with Shell's Health and Safety Policy.</li> <li>Appropriate health and safety signage must be displayed on site.</li> </ul>	<b>Extent</b>	Local	If the proposed mitigation measures are not implemented, the decommissioning of the site could pose a risk to the public and site staff. <ul style="list-style-type: none"> <li>PPE is to be worn on site as to prevent any major incidents on sites, if this isn't worn, it would put site personnel at risk of injury on site.</li> <li>If the site is not fenced off it will allow for open</li> </ul>
	<b>Duration</b>	Temporary		<b>Duration</b>	Temporary	
	<b>Intensity</b>	Low		<b>Intensity</b>	Low	
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Unlikely	
	<b>Magnitude</b>	Medium		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	Low		<b>Sensitivity of Resource /Receptor</b>	Low	
	<b>Significance prior to Mitigation</b>	Minor		<b>Significance post Mitigation</b>	Negligible	

Potential Impact	Significance Rating of Impacts:		Proposed mitigation	Significance Rating of Impacts after Mitigation:		Risk of the impact and mitigation not being implemented
						access to anyone passing by. This would be extremely dangerous as there are many risks when working on site and without the appropriate health and safety procedures and protocols in place it would be a major hazard.
<b><u>Loss of Employment</u></b> The closure of the service station will mean that those employed will no longer be required, and their employment may be terminated.	<b>Extent</b>	Regional	<ul style="list-style-type: none"> <li>Existing employees may be transferred to another Shell service station if feasible.</li> <li>Employees must be given adequate notice prior to closure, to allow them time to seek alternative employment.</li> <li>Service station management must supply employees with a letter of recommendation and certificate of skills to assist them with future job applications.</li> </ul>	<b>Extent</b>	Regional	If the proposed mitigation measures are not implemented, then it will imply a rise in unemployment.
	<b>Duration</b>	Permanent		<b>Duration</b>	Permanent	
	<b>Intensity</b>	High		<b>Intensity</b>	High	If employees are not given adequate time to plan for job loss, then it will give them less time to apply for other jobs. This is especially true if existing employees are not transferred to other Shell branches.
	<b>Likelihood</b>	Possible		<b>Likelihood</b>	Possible	
	<b>Magnitude</b>	Small		<b>Magnitude</b>	Small	
	<b>Sensitivity of Resource /Receptor</b>	High		<b>Sensitivity of Resource /Receptor</b>	High	
	<b>Significance prior to Mitigation</b>	Moderate		<b>Significance post Mitigation</b>	Moderate (+)	

Alternative 1

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

Alternative 2

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- Biodiversity verification and report update by Scientific Terrestrial
- Terrestrial Sensitivity Scan
- Outline Scheme Report
- Geotechnical Investigation Report
- Traffic & Access Study
- Heritage Impact Assessment

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

#### 4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

##### **Groundwater Contamination**

Other activities in the surrounding area (e.g. agriculture, the existing and proposed service stations) may potentially contaminate groundwater sources in the area through uncontrolled events and/or leaching of hazardous materials. This will therefore compound the intensity of the impact on the groundwater resources and the significance rating is therefore **moderate**.

Extent	Local
Duration	Temporary
Intensity	Moderate
Likelihood	Unlikely
Magnitude	Small
Sensitivity of Resource /Receptor	High
Significance prior to Mitigation	<b>Moderate</b>

**Mitigation:** Measures as described in the tables above (construction, operational and decommissioning) need to be implemented and monitored throughout construction and operation.

##### **Aesthetic Value of the Area**

The proposed Aerodrome service station, in addition to the Total Meredale service station (which is located approximately 850m south-east of the site) will have a cumulative negative impact on the aesthetic value of the area. However, due to both service stations being in close proximity to an industrial area and the Southgate Shopping Mall this won't have as significant of an impact. The sensitivity of the receptor is therefore medium while the duration of the impact is permanent. The overall significance of this impact is therefore **Minor**.

Extent	Local
Duration	Permanent
Intensity	Moderate
Likelihood	Possible
Magnitude	Small
Sensitivity of Resource /Receptor	Medium
Significance prior to Mitigation	<b>Minor</b>

**Mitigation:** Mitigation measures to minimize this impact include:

- Construction activities will be restricted to regular working hours, i.e. Monday to Friday (8am- 5pm).
- The construction site, material stores, stockpiles and lay-down areas should be kept tidy.
- All lighting (permanent and temporary) must be downward facing and not in the direction of surrounding properties.

## 5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Proposal

The following section provides the rationale for the EAP's reasoning that the project should be granted positive Environmental Authorisation for the preferred site layout alternative (construction of service station on the site with access from Southgate and Chris Hani Roads).

- Shell has the capacity and resources to adequately implement the mitigation measures stipulated in the EMPr.
- The proposed location is commercially feasible.
- Sensitive social receptors (surrounding landowners) are located close to the site, the potential impacts on these receptors such as noise and dust disturbances can be mitigated through measures such as wetting of surfaces, installation of silencers on equipment and communication with residents as to periods of high noise and dust generating activities etc. A grievance procedure will be maintained during the construction; operation and decommissioning of the service station to record and address any complaints/comments from residents in the area.
- The location of the proposed service station and the construction and operation thereof does not pose a critical physical or economic threat to the livelihoods and families of persons in the surrounds if the mitigation measures are stringently applied. The fact that the property is currently vacant and has not been designated for any other purpose clearly shows that no persons are being threatened with involuntary resettlement or will suffer a direct loss of livelihood.
- The potential for the employment of about 50 persons during the operations phase is seen as potential direct benefit to the nearby communities of Baragwanath, Diepkloof and Southgate in particular.
- The positioning of the proposed service station (where the entrance and exit is positioned on Southgate Road and Chris Hani Road) is indicative that the surrounding communities are not likely to be adversely affected as the use of Aerodrome and Chris Hani Roads would not be impacted.

### Alternative 1

N/A

### Alternative 2

N/A

### No-go (compulsory)

The No- Go alternative is the option of not implementing the activity, to leave the site as is. For this alternative, the service station would not be constructed, and the USTs for the storage of fuel would not be installed.

Not implementing the activity would result in no employment opportunities for the local community while commuters traveling towards Baragwanath would have to travel further in search of fuel.

## 6.

## IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The residual impacts following the implementation of the prescribed mitigation and management measures for the preferred Alternative 1 are as follows:			
Potential Impact after Mitigation	Phase		
	Construction	Operation	Decommissioning
<b>Potential Biophysical Impacts</b>			
Impact on Air Quality	Negligible	Negligible	Negligible
Contamination of Groundwater	Negligible	Moderate	Negligible
Surface Water Contamination		Negligible	Minor
Increased Stormwater Runoff		Negligible	
Loss of Conservation Important (CI) plant species	Negligible		
Habitat loss and loss of fauna including observed and potentially occurring CI species		Negligible	
Sensory Disturbance of Fauna	Minor	Negligible	
Proliferation of alien and invasive plant species	Negligible	Negligible	
<b>Potential Socio-Economic Impacts:</b>			
Noise Disturbance	Negligible	Negligible	Negligible
Increased Heavy Vehicle Traffic on Southgate, Aerodrome and Chris Hani Roads	Minor	Negligible	Minor
Human Health and Safety	Negligible	Negligible	Negligible
Employment	Moderate (+)	Major (+)	Moderate
Crime Rate	Negligible		
Property Value		Moderate	
Increase in informal and formal procurement of goods and services leading to increased local economic activity	Minor (+)		
Economic Impact on existing and proposed service stations		Minor	
Loss of Cultural or Heritage Resources	Negligible		

For alternative:

NA

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

Shell has identified the proposed location, site layout and technology to be implemented based on Shell's internal processes, criteria and Global Design Standards. Potential impacts have been assessed in the tables above and mitigation/ management measures have been recommended where necessary. Although sensitive social and environmental receptors have been identified in close proximity to the site, no fatal flaws are apparent.

Further, Shell has the capacity and resources to adequately implement the mitigation measures stipulated in the EMPr so that the negative potential impacts are reduced to negligible-minor significance during all phases of the construction and operation.

## 7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

The proposed activity has taken the three pillars of Sustainable Development into account, namely, economic

efficiency, social equity and ecological integrity.

**Economic Efficiency:** The activity will create employment opportunities during the operation phase and provide economic security to the appointed construction company during the construction phase.

**Social Equity:** The activity will adhere to Employment Equity requirements during both the construction and operational phase. Training opportunities will be presented where possible both phases.

**Ecological Integrity:** According to the specialist study undertaken for this project, site has undergone high levels of disturbance and has a low ecological value. The development therefore will not destroy any ecology with a high conservation status.

## 8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES	NO
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If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

NA

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

All mitigation measures listed below must be adhered to by Shell and appointed contractors. The full Environmental Management Programme (EMPr) can be found in *Appendix H*.

### **Appointment of an ECO:**

An Environmental Control Officer (ECO) must be appointed for the duration of the site works (construction and decommissioning phases) to:

- Conduct bi-monthly audits to assess compliance with the conditions of the EA and approved EMPr;
- Provide feedback on potential environmental problems associated with the activities on site; and
- Liaise with contractors regarding environmental management – decisions taken and corrective actions that need to be taken.

### **Design Measures:**

- USTs must have secondary containment.
- USTs must be fitted with automatic leak detectors that alert management to a leak.
- Fuel dispenser pumps must be located on a containment slab to contain spillages.
- 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.
- USTs must have corrosion protection.
- Inspection wells will be installed within the UST containment area, at all four corners of the containment area. These wells must be inspected on a monthly basis so that leaks can be detected early.
- USTs are to be fitted to vent pipes which must be installed facing away from the neighbouring areas.

### **Health and Safety**

- Fire extinguishers must be readily available onsite and easily accessible.
- Firefighting equipment must comply with SANS 1151 (Portable rechargeable fire extinguishers - Halogenated hydrocarbon type extinguishers), and be inspected regularly.
- No smoking may be permitted on site.
- No cell phones may be used during fuel dispensing.
- Appropriate health and safety signage must be displayed on site.
- All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing.
- Tanker delivery drivers must be present during delivery of fuel, with the emergency cut off switch.

### **Leakage and Emergency Response**

- An Emergency Response Plan must be in place for the site, which must clearly describe



emergency procedures and include emergency contact numbers.

- Staff must be trained adequately so as to identify potential high risk situations and implement the Emergency Response Plan.
- 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 licenced contractor.

#### **Monitoring**

- The USTs, pipelines and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity.
- 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.
- Water discharged from the oil/water separator must be monitored to ensure it meets the required standard.
- Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act and the Water Act.
- Fuel stock must be monitored on a daily basis and these records must be kept on site.

#### **Socio-Economic Management**

- A grievance procedure will be established whereby any complaints can be received, recorded and responded to appropriately.
- Appointed contractors must comply with Shell's employment equity policy and local employment must be used to fill any vacant construction jobs.
- No employment applications may take place at the entrance to the site, formal employment channels must be used

### **9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT** (as per notice 792 of 2012, or the updated version of this guideline)

The Shell Service Station on the corner of Aerodrome and Chris Hani Roads would service the residents within the surrounding community and would provide them with easy access to fuel. There are a few service stations in the surrounding areas however; due to the area having many industries it is known to have a high number of vehicles passing by therefore, it will be beneficial to have this fueling station in order to accommodate for the high flow of vehicles in the area.

Some benefits associated with the proposed development would be that residents within the area would have easy access for refueling their vehicles. The service station is situated in close proximity to the Southgate Mall and Meredale School, therefore all visitors to the mall and the school will have a service station in close proximity if they need to refuel or visit the shop. It will also help to service the vehicles of the workers in the industrial area nearby.

There will be potential job creation for the local community, especially during the operational phase of the service station, as there may be many job opportunities for petrol attendants or at the convenience store.

### **10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED** (CONSIDER WHEN THE ACTIVITY IS EXPECTED TO BE CONCLUDED)

5 years

### **11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)** (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

YES

# SECTION F: APPENDICES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Public participation information

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Photographs

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

- Biodiversity verification and report update by Scientific Terrestrial
- Terrestrial Sensitivity Scan
- Outline Scheme Report
- Geotechnical Investigation Report
- Traffic & Access Study
- Heritage Impact Assessment

Appendix H: EMPr

Appendix I: Screening Report

## CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.