

6. DESCRIPTION OF THE PUBLIC PARTICIPATION PROCESS

6.1 Advertising of the project

6.1.1 Press advertising

A block advert (150mm x 95mm), according to the Environmental Impact Assessment Regulations, 2014 (as amended), was placed in the local newspaper, Middelburg Observer, on Friday, 2 June 2017. A copy of the advert is provided in Appendix 7.

6.1.2 On-site advertising

Notices according to the Environmental Impact Assessment Regulations, 2014 (as amended), were displayed at the following locations:

- On-site on the corner of Samora Machel Street (R35) and La Roca Boulevard (A3; Figure 6.1);
- On-site adjacent to La Roca Boulevard (A1; Figure 6.1);
- On the notice board at the Steve Tshwete Local Municipality offices.

A copy of the notice was also loaded onto the company website: <http://adienvironmental.co.za>.

A copy of the notice is provided in Appendix 7.

It should be noted that the A1 notice is 594 mm x 841 mm and the A3 notices 416mm x 295mm (A3) in size.

6.1.3 Informing I&APs via the internet

A copy of the following documentation was loaded onto the AdiEnvironmental cc website (<http://adienvironmental.co.za>):

- ♦ Copy of the notice;
- ♦ Background Information Document (BID; Appendix 9).

This information was available on the website for the duration of the basic assessment phase.

A copy of the webpage printouts is provided in Appendix 7.

6.1.4 Feedback from the advertising process

No persons registered as interested and affected parties with regards to the advertising of the project

There was thus no need for a public meeting.





Figure 6.1: Aerial view of notice placements



6.2 Directly affected landowner/user

Pearl Star Investments 85 cc

The proposed development site is located on Portion 1 of Erf 10769 (Middelburg X26) (Figure 6.2) which is registered to Pearl Star Investments 85 cc. Since Pearl Star Investments cc is also the applicant, no outside party will be directly impacted by the proposed project.

Steve Tshwete Local Municipality (STLM)

As indicated in Figure 4.2, the proposed access road will extend cross the Remainder of Portion 27 of Middelburg Town and Townlands 287 JS belonging to the Steve Tshwete Local Municipality. As indicated in Table 6.2, the STLM was informed of the proposed development.

6.3 Identified local authorities/government departments and stakeholders

Table 6.1 provides an indication to which local authorities/government departments and stakeholders Background Information Documents (BIDs; Appendix 9) were forwarded in order to inform them of the proposed project and to obtain their issues of concern.

Table 6.1: Identified local authorities/government departments and stakeholders who received BIDs

AUTHORITY/ STAKEHOLDER	CONTACT PERSON	CORRESPONDENCE SENT	COMMENTS
Department of Agriculture, Forestry and Fisheries (DAFF)	F. Mashabela	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) - Directorate: Land Use and Soil Management – Ermelo	J. Venter	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.3.1
Department of Co-operative Governance and Traditional Affairs (COGTA)	M. Loock	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Department of Energy	M. Machete	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Department of Mineral Resources	S. Mathavela	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Department of Public Works, Roads and Transport	B. Viljoen	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	N.D. Nkambule F. Mdushani	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.3.2
Department of Water and Sanitation (DWS)	S. Maliaga	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Eskom Distribution (Land & Rights)	T. Ludere	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None



AUTHORITY/ STAKEHOLDER	CONTACT PERSON	CORRESPONDENCE SENT	COMMENTS
Eskom Transmission	L. Motsisi	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Fuel Retailers Association	V. Moodley	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.3.3
Middelburg Chamber of Commerce and Industry	M. Hanekom	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	
Mpumalanga Tourism and Parks Agency (MTPA) – Land Advisory Unit	K. Narasoo	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Nkangala District Municipality	S. Links A. Thwala	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
South African Heritage Resources Agency (SAHRA)	SAHRA website	Loaded BID onto SAHRA website (print out from SAHRIS website dated: 12 June 2017; Appendix 8)	Yes. See Section 6.3.4
South African National Roads Agency (SANRAL)	K. Schmid V. Bota	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.3.5
South African Petroleum Industry Association (SAPIA)	F. Shaik	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Steve Tshwete Local Municipality	M. Mahamba	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Telkom	J. Smit	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Trans African Concessions (TRAC)	R. Nkosi C. Davis	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.3.6
Ward 11 councillor	A. Struwig	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None

6.3.1 Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) - Directorate: Land Use and Soil Management

An e-mail (dated: 12 July 2017; Appendix 10) and completed comment sheet (dated: 19 June 2017; Appendix 10) was received from Mr. J. Venter indicating the following:

"The proposed development is situated within the urban development area therefore there is no objection, based on the information which is available. Mitigation measures must be implemented ensuring that no contamination of the natural resources occur. Stormwater plan must be implemented ensuring that no erosion takes place which is slightly visible."

Response from AdiEnvironmental cc

Noted. Mitigation measures in terms of erosion and pollution control are provided in the EMPr (Section 8 of this report).



6.3.2 Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)

According to the Commission on Restitution of Land Rights (F. Mdushani) (letter dated: 13 June 2017; Ref: Appendix 10) there are no claims lodged against the mentioned property and the property is not affected by land claims that have been investigated at this stage.

F. Mdushani also indicated the following:

"If the historical description of any of the above property has changed since 1913, or you are aware of any other local or official name by which it was then described or currently known, kindly supply us with such information to enable us to search further."

Response from AdiEnvironmental cc

The historical property description (i.e. a portion of the Remainder of Portion 27 of the farm Middelburg Town and Townlands 287 JS) was forwarded (email dated: 21 August 2017; Appendix 10) to the Commission as requested.

Subsequently, a letter (dated: 22 August 2017; Appendix 10) was received from the Commission indicating that a claim has only been lodged against Portion 30 of Middelburg Town and Townlands 287 JS. The proposed site is thus not affected by a land claim.

The Commission on Restitution of Land Rights was thus removed from the I&AP list.

6.3.3 Middelburg Fuel Retailers Association

A completed comment sheet (dated: 13 June 2017; Appendix 10) was received from Mr. J.H. Myburgh on behalf of the Middelburg Fuel Retailers Association objecting against the proposed development. The following was indicated:

"We strongly oppose this application reasons being the following:

1. This will not create jobs as per the P.P. Act of 1977. As a fact it will reduce as the volume gained will be from existing filling station and not new volume. Staff will also be affected.
2. There is already a new Total site opening in this already over population town.
3. We need reliable evidence of need and desirability or that the filling station (proposed) will contribute to sustainable development (can be aduced?) and any attempt to do so is based on a Feasibility Study generated as a tool for the developer to convince funders and suppliers that the project is sound."

Response from AdiEnvironmental cc

A feasibility study for the proposed filling station was conducted by the Kotze (2017). An updated volume forecast was provided by Roberts (2017). The results of the studies are discussed in Section 4.7 and a copy of the reports are provided in Appendices 3 and 12.



6.3.4 South African Heritage Resources Agency (SAHRA)

A letter (dated: 26 June 2017; Appendix 10) was received from the South African Heritage Resources Agency (SAHRA). The following was indicated:

"In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. In contexts of development applications, the developer must ensure that no heritage resources will be impacted by the proposed development, by lodging an application to SAHRA and submitting detailed development specifications as a notification of intent to develop. If the application is made in terms of 38(3) of the NHRA then it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. Such a study should follow the SAHRA impact assessment guidelines and sections 28(3).

AdiEnvironmental cc have been appointed to undertake the Basic Assessment process of an Environmental Authorisation application in terms of Environmental Impact Assessment (EIA) 2014 Regulations, of the National Environmental Management Act, no 107 of 1998 (NEMA). The extent of the proposed filling station is 5000 m², adjacent to the Middelburg shopping centre. The location of the proposed development appears to be disturbed from the single photo submitted to the case however the BID document does not contain enough information to waive the requirements of a Heritage assessment in terms of section 28(3). The proposed development is located in moderately sensitive area for fossiliferous rock strata therefore an impact assessment on palaeontological resources must be carried out in a Palaeontological Desktop Study. The study must be carried out by a suitably qualified palaeontologist.

SAHRA grants the development from carrying out an impact assessment on archaeological heritage resources; historic built environment and a heritage based visual impact assessment as the development area is heavily disturbed. The single photo indicates that the area is used as a dumping ground and there is heavy foot and vehicle traffic that would have destroyed all surface heritage resources.

The EAP must also submit to the case additional photos of the area from all points of the development footprint area. The Basic Assessment report and its appendices must be submitted to the case when it is available for public review.

SAHRA will comment further on this proposed development once the requested reports are submitted to the case."

Response from AdiEnvironmental cc

The archaeological and cultural sensitivity of the proposed site is indicated in Section 5.13 of this report. No archaeological artefacts, graves, buildings older than 60 years, etc. are present on site.

Dr. H. Fourie (palaeontologist) compiled a letter requesting exemption from compiling a desktop study. A copy of the letter is provided in Appendix 13. Fourie (2017) indicated the following:

"This letter serves as a Letter of Exemption. The development will be located on a Formation with a Low Palaeontological sensitivity, therefore there is a



low possibility that significant fossils will be present in the bedrock of these geological units. The formation is surrounded by the Dwyka Group of Moderate Sensitivity and the Selons River Formation with a Low Sensitivity, therefore a Desktop Study or Field Study is not necessary (Groenewald and Groenewald, 2014)."

A copy of the Basic Assessment Report (including appendices and additional photos) will be loaded onto the SAHRA website as requested.

6.3.5 South African National Roads Agency (SANRAL)

An e-mail (dated: 30 June 2017; Appendix 10) was received from S. Boezak (SANRAL) requesting to be registered as an Interested and Affected Party (I&AP) since the section of the R35 extending past the site is a SANRAL road.

Response from AdiEnvironmental cc

AdiEnvironmental cc indicated (e-mail dated: 5 July 2017; Appendix 10) that SANRAL was registered as an I&AP. Background Information Documents were forwarded to Mr. K. Schmid and V. Bota (see Table 6.1). A Background Information Document and comment sheet were also forwarded to S. Boezak. To date, no further comment has been received.

It should be noted that a letter from SANRAL (letter dated: 21 October 2016; Appendix 10) was obtained by the traffic engineer approving 'in principle' the proposed left-in-only access road from the R35 (Figure 4.2) subject to detailed design being submitted before construction.

6.3.6 Trans African Concessions (TRAC)

An e-mail (dated: 12 June 2017; Appendix 10) was received from the C. Davis (TRAC) indicating the following:

"Thanks for the notification. As a rule filling stations do not generate additional traffic, but merely passer-by traffic stopping at the filling station. No access in close vicinity to the N4 Toll route. The R35 is not under TRAC's jurisdiction. We thus don't seem to be affected by this application."

Response from AdiEnvironmental cc

Noted.

6.4 Surrounding landowners/users

Figure 6.2 provides an indication of the adjacent landowners/users in relation to the proposed site.

In order to determine the registered owners of the various properties, a Deeds Search was conducted via the WinDeed system of the Deeds Office of South Africa. The Deeds Search Template provides information pertaining to land ownership, size and land value of each of the properties.

The adjacent landowners were informed of the proposed development through the advertising process as indicated in Section 6.1 and the distribution of Background Information Documents. A copy of the Background Information Document is provided in Appendix 9.



Table 6.2 provides an indication to which surrounding landowners/users Background Information Documents (BIDs; Appendix 9) were forwarded and/or delivered in order to inform them of the proposed project and to obtain their issues of concern. Figure 6.3 indicates the location of the various landowners as well as the closest homesteads.

Table 6.2: Identified adjacent land owners/users who received BIDs

PROPERTY/BUSINESS (FIGURE 6.2)	LANDOWNER/ CONTACT PERSON	CORRESPONDENCE	COMMENTS
Remainder of Portion 27 of Middelburg Town and Townlands 287 JS	Steve Tshwete Local Municipality (M. Mahamba)	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None
Public Open Space (Erf 10775) adjacent to the site	G. Strydom (leases the said property from the STLM)	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	Yes. See Section 6.4.2
Barloworld Toyota Middelburg (Portion 9 of Erf 10768)	P. van Dyk	BID delivered on 9 June and e-mailed 12 June 2017 (Appendix 8)	None.
SAE BUSINESS PARK AREA (FIGURE 6.2)			
@Riders	W. Schuurman	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None.
Auto Pedigree	B. Pretorius	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None.
Highlands Home & Living	H. Botes	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None.
HMJ Glassworx	J. Brits	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None.
Middelburg Car Radio & Airconditioning	T. Viljoen	BID delivered on 9 June and e-mailed 12 June 2017 (Appendix 8)	None.
Shalom Slaghuis	B. Lombard	BID delivered on 9 June and e-mailed 12 June 2017 (Appendix 8)	None.
The Courier Guy	S. Ferreira	Email (dated: 12 June 2017; Appendix 8) with BID forwarded.	None.
Toolquip & Allied	S. Kadar	BID delivered on 9 June	Yes. See Section 6.4.1
Total Filling Station / Basuz Trading (Erf 11009)	S. Mokoana	BID delivered on 9 June 2017. E-mail received on 14 June 2017 (Appendix 10). Comment sheet received on 30 June 2017 (Appendix 10).	Yes. See Section 6.4.3
Tracker Middelburg	M. Grunig	BID delivered on 9 June and e-mailed 12 June 2017 (Appendix 8)	None.
Dezzo Trading 356 cc	R.A. Hanyane	Comment sheet received on 3 July 2017 (Appendix 10).	Yes. See Section 6.4.4



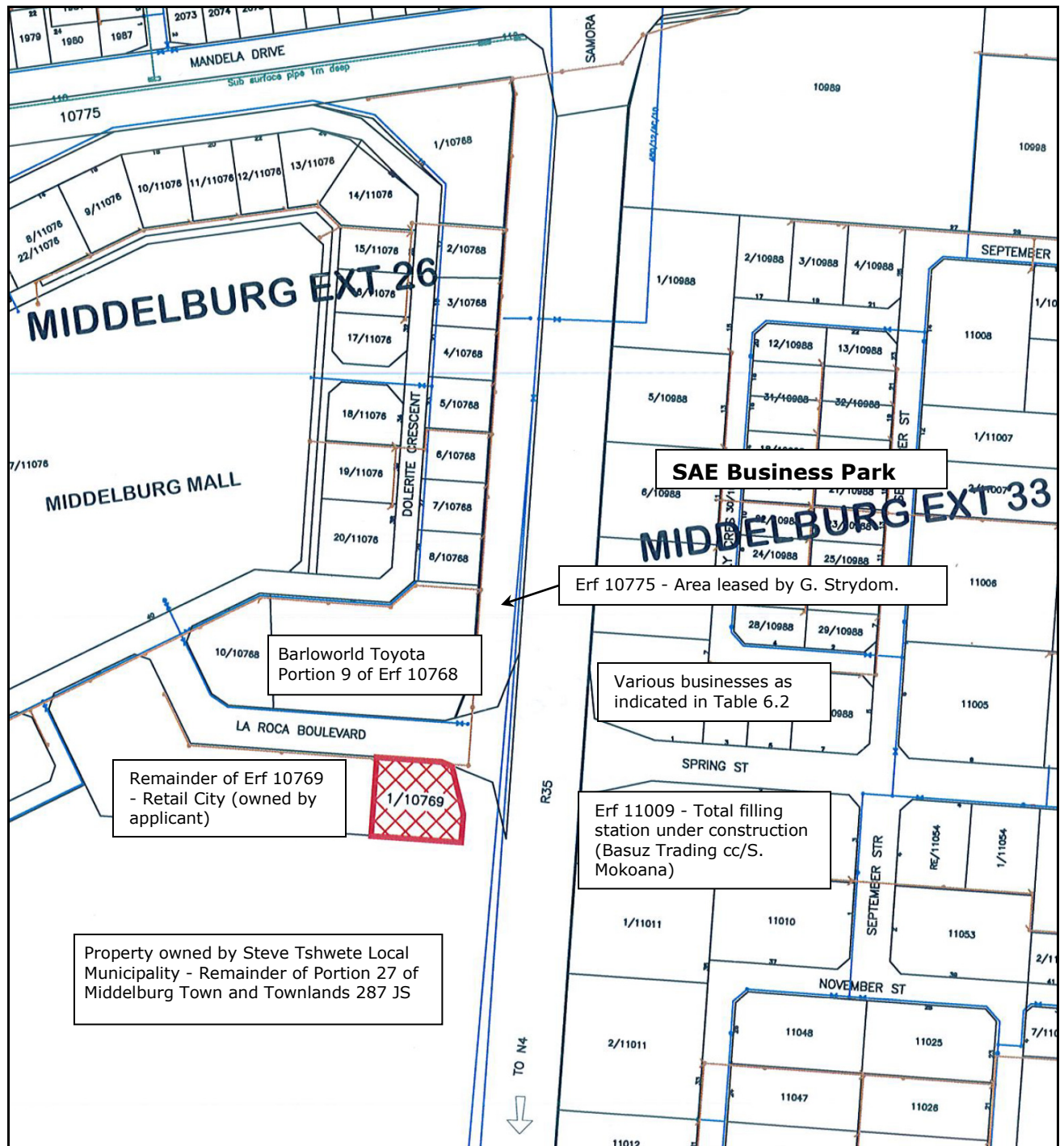


Figure 6.2: Surrounding landowners/users

6.4.1 General comment from surrounding businesses

The following general positive comments were received (in passing) from the surrounding businesses whilst delivering (9 June 2017) the Background Information Documents:

- No objections.
- The proposed filling station would have a positive impact in terms of attracting more people to the area, which would benefit surrounding businesses.



- Employees and customers at the Middelburg Mall would have easy access to fuel.
- Employees at the surrounding businesses would be able to purchase lunch at the convenience store.

A completed comment sheet (dated: 9 June 2017; Appendix 10) was received from S. Kader (Toolquip & Allied) indicating **no comment and that he does not wish to remain on the mailing list.**

Only one issue of concern was raised verbally in passing namely, **a potential increase in traffic in the area (especially large vehicles), which could impact on traffic flow.**

Response from AdiEnvironmental cc

According to Kotze (2017), filling stations generally intercept trips from the background traffic as opposed to other developments that generate additional trips. No increase in traffic volumes are thus expected as a result of the new filling station. Further details regarding traffic are provided in Section 5.16, Appendix 3 and Appendix 12.

6.4.2 G. Strydom

An e-mail (dated: 12 June 2017; Appendix 10) was received from Mr. G. Strydom in which the following was indicated:

"I have a rental agreement with the council for 50 years - 45 years remaining on the 35 mm servitude border surrounding the Mall. Please indicate to me which part of the entrance runs over my rental section."

Response from AdiEnvironmental cc

According to the lease agreement (obtained from the applicant), the lease area is located on the eastern boundary of the proposed filling station site. It comprises the public open space area (Erf 10775) along the eastern and northern boundaries of the mall as indicated in Figure 6.3.

As indicated in Figure 4.2 (and in the Background Information Document; Appendix 9), the proposed access road originally extended across the Public Open Space area located between the said site and Samora Machel Street (R35). The applicant subsequently decided to re-align the proposed access road to avoid crossing the said lease area and impacting on G. Strydom (Figure 3.1).



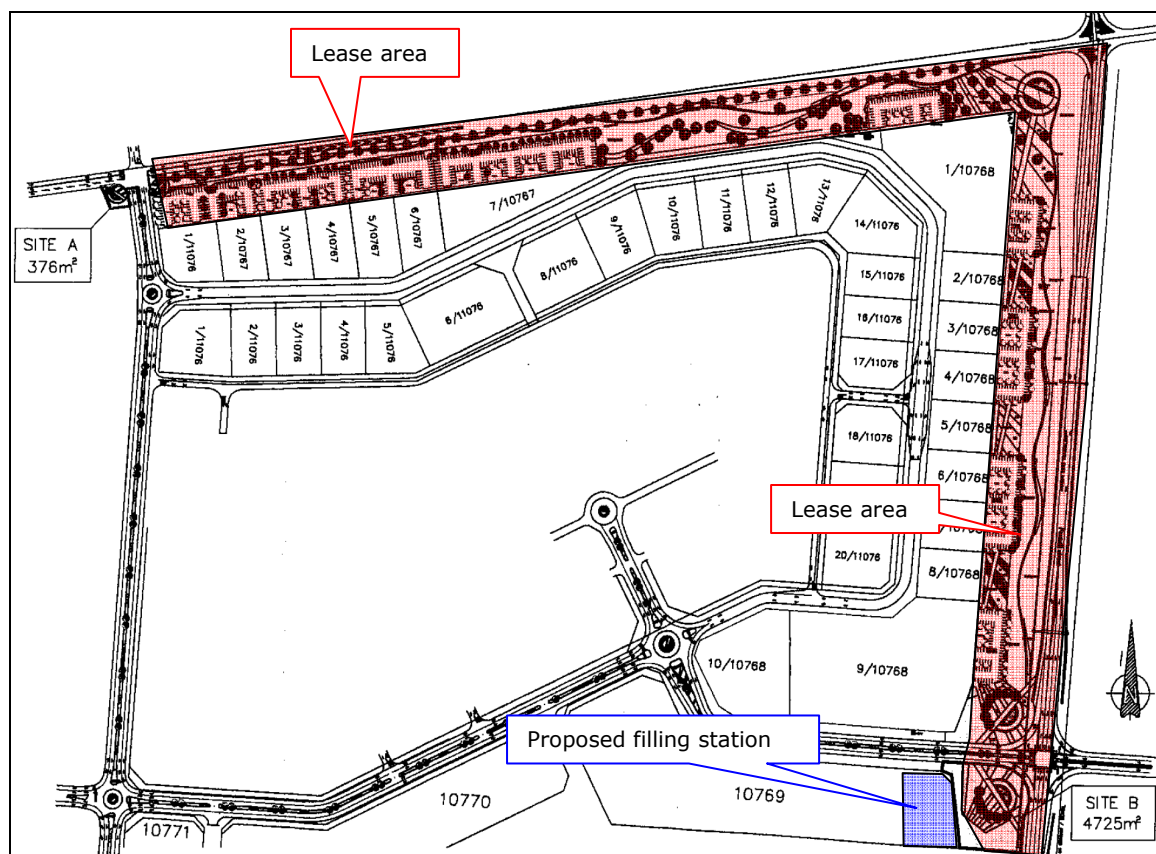


Figure 6.3: Area leased by G. Strydom

6.4.3 Total Filling Station (S. Mokoana/Basuz Trading cc)

A Total filling station (to be operated by S. Mokoana/Basuz Trading cc) was in the process of being constructed east of the proposed filling station site, on the corner of Samora Machel Street (R35) and Spring Streets (Figure 6.2) when public participation was undertaken. The said filling station subsequently opened for business.

A completed comment sheet (dated: 30 June 2017; Appendix 10) was received from S. Mokoana indicating the following:

"Ke ngwadisa ke le motho o naleng kganyogo le go amega go le nanego la tshupidisa ya 10769. Ke modudi".

The comment sheet was translated from Sepedi by Translation World (letter dated: 12 July 2017; Appendix 10) to mean - I register as an interested and affected person in the 10769 programme. I am a resident.

In addition, an e-mail (dated: 14 June 2017; Appendix 10) was received from L. van Rookhuyzen) registering as an interested and affected party on behalf of S. Mokoana and Total. The following was indicated:

"The landowner of the existing site launched an objection to the development of an additional service station within 200 m of the existing site. We therefore would like to register as an interested & affected party for this project and strongly oppose the new development for the reasons contained in the original objection dated December 2014."



The original objection (dated: 2 December 2014; Appendix 10) was lodged by S. Mokoana (Basuz Trading cc) in terms of the townplanning process and addressed to the Steve Tshwete Local Municipality. The following was indicated:

"I hereby object to the application for Conditional use permit for the purposes of operating a petrol filling station submitted in terms of the Steve Tshwete Town Planning Scheme, 2004. The reasons for my objections are as follows:

1. The feasibility study that was submitted with the motivational memorandum (application) did not take into account the current business that will be operating on the neighbouring sites. From the study carried out, conclusions were drawn from incorrect and insufficient information. There was an oversight of developments that were already approved by the municipality that are impacted negatively by the operation of another filling station less than 200 m away.

An application as submitted by Sisonke Development Planners on behalf of Basuz Trading cc for Consent Use for the purposes of operating a filling station on Erf Number 11009 situated on Fontein Street (now Samora Machel Street/R35) in terms of Clause 21 of the Steve Tshwete Town Planning Scheme read with Section 20 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) and was approved on 16 April 2008.

{Page 3 of the memorandum makes reference to page 10 of the feasibility study "...The site is relatively isolated in terms of the location of competition site (Please refer to "page 10 of the Feasibility Study attached hereto as Annexure D). Page 10 of the feasibility study highlights that it will concentrate on competitor sites that are within a 3 km radius and 4 existing sites were deemed relevant to the study.

Page 14 of the feasibility study goes on to mention that "... the development and operation of the proposed filling station will have a detrimental impact on the stations in adjacent local markets, but it will be the only station serving the new developing local market at Middelburg mall..."

On page 19 of the feasibility study, a conclusion is made that "...the impact on any of the existing sites will not be enough to impact on the feasibility of all of the individual sites surveyed. General traffic growth in the area will ensure short term losses will be regained within 3 - 5 years. The proposed Engen Middelburg Mall Filling Station located along R35 near Middelburg Mall is considered feasible for filling station development"}.

From the incept above it is clear that Basuz filling station was not taken into account during the feasibility study. The town planner responsible was aware of the surrounding business owners as letters of intent were issued to the neighbouring owners as required by the Steve Tshwete Town Planning Scheme. They however failed to clearly indicate the surrounding land uses, the surrounding zoning and the future developments in the area, thereby not conducting a conclusive feasibility study.

I therefore object on the basis of incorrect representation of facts, submission of an incorrect report to council as well as disregarding the impact of the proposed development on the existing ones on fair competition basis.



2. The location of the proposed filling station to the existing one does not comply with the principles of the Spatial Planning Land Use Management Act, 2013 (Act 16 of 2013).

Principle 7(b): The principle of spatial sustainability, whereby spatial planning and land use management systems must -

(iv) Promote and stimulate the effective functioning of land markets.

Basuz filling station and the proposed Engen filling station are both located on R35 and less than 200m away from each other. Ideally, it is recommended by various departments and agencies to determine the impact a proposed filling station has on the existing ones within a 3km radius. In this case both filling stations located within 200m from each other are targeting traffic to the N4, from Mineralia and those visiting the mall. This is a very small percentage to be serviced by 2 filling stations and expect a profit. This would have been displayed should a feasibility study done was a true reflection of the current situation.

(v) Consider all current and future costs to all parties for the provision of infrastructure and social service in land developments and (vi) Promote land development in locations that are sustainable and limit urban sprawl, and;

Filling stations have a limited use due to the design and associated infrastructure. Therefore, the chances of the proposed filling station or Basuz filling station lying idle are significant due to the fact there is just not enough clientele for both filling stations to thrive and make a profit. Consideration should be given to the conversion of such huge investments should they not thrive. Businesses should be situated in such a way that complement each other and not pose unhealthy competition.

It is therefore submitted that my objections will be treated with your utmost consideration. S. Mokoana".

Response from WSP Group Africa (Pty) Ltd

Eben Kotze of WSP Group Africa (Pty) Ltd addressed the above-mentioned objection from Total/S. Mokoana in a letter (dated: 26 July 2017; Appendix 10). The following was indicated:

Background

A feasibility study was conducted for a proposed filling station situated on the corner of Samora Machel Street (R35) and La Roca Boulevard in Middelburg, Mpumalanga. The latest revision for the feasibility study is dated June 2017 (Revision 3). Since this submission, a letter of objection for operating a filling station has been received from Bazus Trading.

The purpose of this letter is to address the objection submitted by Bazus Trading.

Addressing the objection

The proposed filling station will not have significant impact on the new Total filling station under construction for the following reasons:

- i. Page 12 of the feasibility study mention that "the site has no direct access from the R35, and has low passing traffic on Spring Street (under 4000vpd), which means it will be a marginal site and will not have a large impact due to the planned site, as they share less than*



20% of the interceptable traffic at the intersection of the R35 and Spring Street."

- ii. On page 13 of the feasibility study, Table 3 indicate that potential pass-by traffic for the proposed site is approximately 25 000 vpd and only approx. 14.5% of this traffic will be shared with the new proposed filling station (traffic passing both facilities' accesses).*
- iii. On page 15 of the feasibility study, Table 5 indicate that only 10% of the fuel sales can be expected to be lost due to the proposed filling station, and this is mainly based on shared traffic (passing the accesses).*
- iv. Due to the large SAE Business Park (with approved rights) being developed on an ongoing basis (new industrial business sites every year) there will be ongoing annual traffic growth passing the access of the new Total Spring Street facility, therefore it is estimated that any loss in fuel sales due to the proposed new site (on the corner of Samora Machel Street and La Roca Blvd) should be recovered in a few years.*

Conclusions

As mentioned above, it can be concluded that the proposed filling station (on the corner of Samora Machel and La Roca Blvd) is not expected to have a significant impact on the Total filling station under construction, as the latter only has access off Spring Street (no access off the R35) and therefore do not share significant positive traffic.

Further details regarding the feasibility of the site are provided in Section 4.7 and Appendix 3.

6.4.4 R.A. Hanyane

Two completed comment sheets, one in English and one in XiTsonga (dated: 3 July 2017; Appendix 10) were received from R.A. Hanyane (Dezzo Trading 356 cc) indicating the following:

"Affected & Interested Party. Environment, Presidency is wrong."
"Tane hiloloko nekhumbheka ka khaphane leyi. Ne munhu loye nenga mukka-
teko wa ndhawu leye"

Translation World (letter dated: 12 July 2017; Appendix 10) translated the comment as follows "As affected by this company. I am a citizen of this place".

*Response from AdiEnvironmental cc
Noted.*

6.5 Department of Agriculture, Rural Development, Land and Environmental Affairs

The project was registered with the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) on 31 August 2017 (see cover letter and application dated: 31 August 2017; Appendix 1). In addition, a date for a meeting and site visit was requested.

Subsequently, a letter (dated: 11 September 2017; Ref: 1/3/1/16/1N-104; Appendix 1) was received from the Department acknowledging receipt of the



application form. It was indicated that AdiEnvironmental cc may proceed with the Basic Assessment process.

A site visit was attended by Ms. R. Janse van Rensburg of AdiEnvironmental cc and Ms. O. Fakude of DARDLEA on 21 September 2017. The following comment was received from Ms. Fakude (e-mail dated: 7 October 2017; Appendix 10):

During the site visit that was undertaken on the 21/09/2017, the site was viewed and there are no objections with regards to the proposed project, but the Department also observed that:

- very close to the development footprint trucks use that space for parking, of which it is unknown whether they belong to the applicant or not, and what will happen to them once the project commences.
- there is a wetland not far from the site, and should there be any infilling during construction, the wetland must be rehabilitated.
- the clearance of the area must not affect the area that is applied for if clearance continues.

Response from AdiEnvironmental cc

The above-mentioned issues from DARDLEA pertain to the clearance of vegetation and dumping of coal on and adjacent to the site as a result of illegal truck parking.

A letter (dated: 12 October 2017; Appendix 10) in this regard was forwarded to the Steve Tshwete Local Municipality. The following was indicated:

"Ms. Fakude expressed concern regarding the parking of trucks on the proposed site and adjacent thereto that has resulted in the clearance of a large area of indigenous vegetation. In addition, it was noted that coal had been dumped on the adjacent site. Ms. Fakude expressed concern in this regard in view of the potential pollution of the soil and the nearby wetland area and subsequently sent an email (dated: 7 October 2017) regarding her concerns.

It was indicated to Ms. Fakude that the adjacent property, Remainder of Portion 27 of the farm Middelburg Town and Townlands 287 JS, belongs to the Steve Tshwete Local Municipality.

We hereby would like to bring the above-mentioned DARDLEA comments to the Council's attention. We request that steps be put in place to prevent the said area being used as a truck parking area (resulting in the dumping of coal, etc.) and that the said area be rehabilitated."

To date, no feedback has been received from the Steve Tshwete Local Municipality.

A letter from AdiEnvironmental (dated: 17 November 2017; Ref: BA 2017/04; Appendix 10) was forwarded to the Department requesting an extension of 50 days with regards to the submission of the Final Basic Assessment Report.

Subsequently, a letter from the Department (dated: 24 November 2017; Ref: 1/3/1/16/1 N-104; Appendix 10) was received granting the requested extension. The following was indicated: *"The request for an extension of 50 days as from 28th November 2017 is therefore granted, and it will lapse on the 8th February 2018."*



6.7 List of Interested and Affected Parties

From the above public participation process, the following list of Interested and Affected Parties was compiled:

INTERESTED AND AFFECTED PARTY LIST	
Organisation	Name
Government Departments	
Department of Agriculture, Forestry and Fisheries	F Mashabela
Department of Agriculture, Rural Development, Land and Environmental Affairs - Directorate: Land Use and Soil Management – Ermelo	J Venter
Department of Co-Operative Governance and Traditional Affairs	M Loock
Department of Energy	M Machete
Department of Mineral Resources	S Mathavela
Department of Public Works, Roads and Transport	B Viljoen
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	F Mdushani
Department of Water and Sanitation	NS Maliaga
Department of Agriculture, Rural Development, Land and Environmental Affairs	O Fakude
Other Organisations	
Eskom Distribution	T Ludere
Eskom Transmission	L Motsisi
Fuel Retailers Association	V Moodley
Middelburg Fuel Retailers Association	J Myburgh
Mpumalanga Tourism and Parks Agency (MTPA)	K Narasoo
Middelburg Chamber of Commerce and Industry	M Hanekom
South African Heritage Resources Agency (SAHRA)	Website
South African National Roads Agency	K Schmid, S Boezak V Bota
South African Petroleum Industry Association	F Shaik
Telkom	J Smit
Trans African Concessions (TRAC)	C Davis, R Nkosi
Local Municipality and Municipal Councillor	
Steve Tshwete Local Municipality	M Mahamba
Nkangala District Municipality	S Links, A Thwala
Ward 11 councillor	A Struwig



INTERESTED AND AFFECTED PARTY LIST	
Surrounding Landowners	
Property (Figure 6.2)	Landowner/Contact person
Remainder of Portion 27 of Middelburg Town and Townlands 287 JS	Steve Tshwete Local Municipality
Public Open Space (Erf 10775) around Middelburg Mall	G Strydom
Barloworld Toyota Middelburg (Portion 9 of Erf 10768)	P van Dyk
SAE Business Park	
@Riders	W Schuurman
Auto Pedigree	B Pretorius
Highlands Home & Living	H Botes
HMJ Glassworx	J Brits
Middelburg Car Radio & Airconditioning	T Viljoen
Shalom Slaghuis	B Lombard
The Courier Guy	S Ferreira
Basuz Trading/Total filling station (Erf 11011)	S Mokoana
Total	L van Rookhuyzen
Tracker Middelburg	M Grunig
Dezzo Trading 356 cc / Resident	RA Hanyane



7. ENVIRONMENTAL IMPACT DESCRIPTION AND EVALUATION

7.1 Introduction

This section of the report describes and evaluates the potential impact of the proposed development on the environment. The impact of the development has to be assessed in terms of the following development phases:

- **Planning and design phase**
- **Construction phase**
- **Operational phase**
- **Decommissioning phase**

7.2 Evaluation of impacts

The evaluation of impacts is conducted in terms of the following criteria:

- **Nature of impact**

- **Extent of impact**

Site	Effect limited to the site and its immediate surroundings
Local	Effect limited to within 3-5 km of the site
Regional	Effect will have an impact on a regional scale

- **Duration of impact**

Short	Effect lasts for a period 0 to 5 years
Medium	Effect continues for a period between 5 and 10 years
Long	Effect will cease after the operational life of the activity either because of natural process or by human intervention
Permanent	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient

- **Probability**

Improbable	Less than 33% chance of occurrence
Probable	Between 33 and 66% chance of occurrence
Highly probable	Greater than 66% chance of occurrence
Definite	Will occur regardless of any prevention measures

- **Significance of impact**

Low	Where the impact will have a relatively small effect on the environment and will not have an influence on the decision
Medium	Where the impact can have an influence on the environment and the decision and should be mitigated
High	Where the impact definitely has an impact on the environment and the decision regardless of any possible mitigation

- **Status**

Positive	Impact will be beneficial to the environment
Negative	Impact will not be beneficial to the environment
Neutral	Positive and negative impact



It must be noted that many of the potential negative consequences can be mitigated successfully. It is however, necessary to make a thorough assessment of all possible impacts in order to ensure that environmental considerations are taken into account, in a balanced way, as far as possible, supporting the aim of creating a healthy and pleasant environment.

7.3 Planning and design phase

The planning and design phase involved mostly office work and site surveys with regards to the design of the layout plan, the Basic Assessment Report and the specialist studies. It also involves obtaining the necessary authorisations for the said development.

No actual work (pre-construction or construction activities) took place on site. Therefore, no mitigation measures need to be implemented.

7.4 Construction phase

Filling Station:

The proposed filling station will be located on Portion 1 of Erf 10769, Middelburg X26, which is 5000m² in extent. The development will comprise of the following as indicated in Figure 3.2 (conceptual layout plan):

- Underground tanks/tank farm (93 Unleaded, 95 Unleaded and diesel);
- Pump island (above-ground fuel pumps and hose dispensers);
- Associated pump and tank infrastructure (e.g. delivery pipes, fillers, suction pumps, etc.);
- Canopy covered forecourt with 10 vehicle refuelling bays;
- Convenience store (including fast food outlet) of ±200m²;
- ATM;
- Car parking;
- Delivery parking areas;
- Ablution facilities;
- Two access roads;
- Storm water channel and containment slab with catchpit;
- Generator
- Landscaped area.

As indicated in Section 4.3, Roberts (2017) proposed that the filling station infrastructure (i.e. buildings and canopy) be turned a few degrees eastward in order to improve visibility and allow easy access and turning for the 17 m fuel tankers. A new layout plan (Layout Plan No 3; Figure 4.3) was thus drafted and is the preferred option. **Layout Plan No 2 (Figure 4.2 and Figure 3.2) however, still indicates the conceptual layout of the filling station in terms of location of tank farm, shop, fuel pumps, etc.** Detailed designs will only be available at a later stage once the preferred fuel supplier has been decided upon.

The construction phase would involve the following:

- clearing of vegetation and levelling of the site;
- excavation/earthworks for the underground tank pits, service trenches and building foundations;
- installation of the underground tanks and associated infrastructure;



- installation of the services (i.e. water supply, electrical connections, sewer network, internal roads, storm water pipes);
- laying of the required foundations for buildings;
- building of the outer structures;
- installation of the required internal fittings;
- construction of access roads;
- surfacing/paving of parking area;
- rehabilitation of disturbed areas;
- landscaping.

Proposed access road:

Access to the proposed filling station site will be provided from La Roca Boulevard and Samora Machel Street (R35) as indicated in Figure 5.20.

The construction of the proposed access road would involve the following:

- clearing of vegetation and levelling of the site;
- layering of the road;
- surfacing of the road.

Section 7.7 provides further details with regards to potential impacts identified.

7.5 Operational phase

The operational phase would involve the following:

- The utilization of the filling station and associated infrastructure;
- The utilization of the proposed access road from Samora Machel Street (R35).

Section 7.7 provides further details with regards to potential impacts identified.

7.6 Decommissioning phase

If required, this phase would involve the decommissioning of facilities constructed (at the said time) as part of this project (see Section 7.4).

The decommissioning phase will not be discussed in detail. It is recommended that at the time of decommissioning, a specific Environmental Management Programme (EMPr) be compiled which specifically addresses this phase. This EMPr would have to address issues such as the removal of underground tanks, removal of building rubble and the rehabilitation of the site. Soil conservation measures would also have to be implemented.

7.7 Identification of potential impacts

The following tables provide an indication of the environmental features that will be impacted (directly and indirectly) during the construction, operational and decommissioning phases of the proposed project as indicated above.



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE									
	AREA: Site - 5000 m ² Access Road - 600 m ²					AREA: Site - 5000 m ² Access Road - 600 m ²					AREA: Site - 5000 m ² Access Road - 600 m ²									
	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)					
TOPOGRAPHY	<u>Filling Station:</u> <ul style="list-style-type: none"> The site is fairly flat with a gentle slope in a north easterly direction towards the corner of Samora Machel Street (R35) and La Roca Boulevard. The topography of the site and surrounding area have already been impacted by development. In general, the construction activities (e.g. removal of vegetation, sloping of the site and construction of buildings) would have a direct impact on the topography and would result in changed runoff patterns and an increased risk of soil erosion if mitigation measures are not implemented. The excavation of the tank farm will also have a temporary impact on the topography until such time as it is backfilled. 					SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> Impact on topography will continue in terms of the presence of buildings, parking areas, etc. which in turn will impact upon the runoff from the site if mitigation measures are not implemented. 					SITE	LONG	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE
	<u>Access road:</u> <ul style="list-style-type: none"> In general, the construction activities (e.g. removal of vegetation, sloping of the area and construction of access road) would have a direct impact on the topography and would result in changed runoff patterns and an increased risk of soil erosion if mitigation measures are not implemented. 					SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <ul style="list-style-type: none"> Impact on topography will continue in terms of the presence of the tarred access road, which in turn will impact upon the runoff from the site if mitigation measures are not implemented. 					SITE	LONG	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE
	<u>Filling Station and Access road:</u> <ul style="list-style-type: none"> According to Kotze (2017), the flat topography of the site could result in lowering the construction costs of the filling station, access road and other engineering services (if compared to other similar sites) since less cut-and-fill would be required. 					SITE	SHORT	DEFINITE	MEDIUM POSITIVE	MEDIUM POSITIVE	<u>Filling Station and Access road:</u> <p>NONE. No further impact since no further construction would take place.</p>									
GEOLOGY	<u>Filling Station:</u> <ul style="list-style-type: none"> The site is underlain by purple grey shale of the Loskop Formation. The direct impact on geology will depend on the depth of the excavations required for the underground tanks, building foundations and service trenches. The possible impact on the underlying geology cannot be mitigated. 					SITE	PERMANENT	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>NONE. No further impact since no further construction would take place.</p>									
	<u>Filling Station:</u> <ul style="list-style-type: none"> In terms of excavation characteristics, Hansmeyer (2004) anticipates some excavation problems (intermediate excavation) for trenches/excavations deeper than 70cm (TP51; Figure 5.9a) due to the presence of a clay and shale layer. The potential excavation problems could impact on construction costs and time in terms of the installation of the underground tanks, installation of services and foundation excavations. This would have to be taken into account in the budget and project schedule. 					SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>NONE. No further impact since no further construction would take place.</p>									
	<u>Filling Station:</u> <ul style="list-style-type: none"> The western and central portions of the site comprise collapsible soils with a collapse settlement expected in the order of 20mm. According to Hansmeyer (2004), structures could experience settlement, cracking and possible misalignment if mitigation measures were not implemented during the construction phase. 					SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> The buildings and associated infrastructure will continue to be impacted upon if mitigation measures in terms of the geotechnical conditions were not implemented. 					SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
											<u>Filling Station:</u> <p>NONE. No further impact since no further construction would take place.</p>									
											<u>Filling Station:</u> <p>NONE. It is not anticipated that new trenches/foundations will be excavated.</p>									
											<u>Filling Station:</u> <p>NONE. No further impact since the existing buildings will be decommissioned and no further construction would take place.</p>									



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
GEOLOGY	<u>Filling Station:</u> <ul style="list-style-type: none"> The entire site is underlain by medium to highly active clays (up to 2m thick and more) derived from in-situ decomposed diabase and Loskop shale. The expansive soil horizon could impact on the structures if mitigation measures were not implemented. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> The buildings and associated infrastructure will continue to be impacted upon if mitigation measures in terms of the geotechnical conditions were not implemented. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>NONE. No further impact since the existing buildings will be decommissioned and no further construction would take place.</p>					
	<u>Access road:</u> <ul style="list-style-type: none"> The proposed access road is underlain by purple grey shale of the Loskop Formation. The construction of the access road could impact on the geology depending on the depth of the excavations required to lay the road foundation. 	SITE	PERMANENT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <p>NONE. No further impact since no further construction would take place.</p>						<u>Access road:</u> <p>NONE. It is not anticipated that new road foundations will be excavated.</p>					
	<u>Access road:</u> <ul style="list-style-type: none"> The proposed access road is underlain by medium to highly active clays (up to 2m thick and more) derived from in-situ decomposed diabase and Loskop shale. The expansive soil horizon could impact on the road surface if mitigation measures were not implemented. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <ul style="list-style-type: none"> The proposed access road will continue to be impacted upon if mitigation measures in terms of the geotechnical conditions were not implemented. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <p>NONE. No further impact since the existing road will be decommissioned and no further construction would take place.</p>					
SOILS	<u>Filling Station:</u> <ul style="list-style-type: none"> The site is classified as having moderate potential arable land and high grazing value (AGIS Comprehensive Atlas), which will be impacted as a result of construction. However, the site forms part of an established township (Middelburg X26) and has not been used for agricultural activities for many years. No agricultural activities are taking place in the area. In addition, the soil has been impacted as a result of trucks parking on site, littering, excavations, surrounding development, etc. 	SITE	SHORT	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>Once developed, the site will no longer be available for agricultural use. It should however, be noted that the site does form part of an established township and that no agricultural activities are taking place in the area.</p>	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> Proper rehabilitation of the site after decommissioning could re-establish the agricultural potential of soil. This would however, depend on the intended end land use at the time. 	SITE	LONG	IMPROBABLE	LOW POSITIVE	LOW POSITIVE
	<u>Filling Station:</u> <ul style="list-style-type: none"> Most of the vegetation on site was removed and the area covered with a gravel/soil layer for truck parking. The soil on site has thus already been impacted upon. During construction of the filling station, soil will be further impacted in terms of soil structure, nutritional and chemical values when the remaining vegetation and topsoil are removed, the site is sloped, the buildings and associated infrastructure are constructed and the tank farm is excavated. The soil will also be impacted in terms of stockpiling of topsoil, subsoil, overburden and rocks. 	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> Direct impact on soil will continue i.t.o. soil structure, nutritional and chemical values and soil compaction due to the presence of buildings, etc on site. 	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>The decommissioning activities will have an initial negative impact on the soil of the site in terms of disturbance (physical and biological properties). The removal of any polluted soil and proper rehabilitation of the site after decommissioning will however, have a positive impact on the soil.</p>	SITE	SHORT	PROBABLE	LOW NEUTRAL	LOW NEUTRAL
	<u>Filling Station:</u> <ul style="list-style-type: none"> Sediment transport and erosion may occur following the clearing of the site in preparation of construction. This could impact on the culvert located underneath La Roca Boulevard and the municipal storm water system in terms of blockages/siltation. The impact is expected to be minimal since the site is small and relatively flat. 	SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> It is unlikely that soil erosion will take place during the operational phase, since the site will be paved and storm water will be channelled into the existing municipal stormwater system. 	SITE	LONG	IMPROBABLE	LOW NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <p>Soil erosion could occur if the site is not revegetated properly after decommissioning.</p>	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE

ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
SOILS	<p>Filling Station: Some soil pollution may already be taking place on site as a result of the parked trucks leaking oil as well as the dumping of waste/litter/coal. The removal of any polluted soil during the construction phase would have a positive impact on the soil of the site.</p> <p>Further soil pollution may however, occur during the construction of the filling station and access road if:</p> <ul style="list-style-type: none"> the construction vehicles are not maintained/repared resulting in oil leaks and fuel spills; waste management measures are not implemented, proper ablation and sanitation facilities are not provided for the site workers to use on site. 	SITE	SHORT	PROBABLE	MEDIUM NEUTRAL	LOW NEUTRAL	<p>Filling Station: Soil pollution could occur if:</p> <ul style="list-style-type: none"> waste management measures are not implemented at the site (especially hazardous waste management e.g. oil cans, fuel spillage, etc.); the sewer infrastructure is not properly installed and maintained or does not have sufficient capacity resulting in leaking manholes, etc.; proper storm water control measures are not implemented and polluted runoff water (e.g. from fuel spillage, vehicles leaking oil, etc.) enters the municipal storm water system. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p>Filling Station: Soil pollution may occur if:</p> <ul style="list-style-type: none"> The vehicles are not maintained/repared resulting in oil leaks and fuel spills; Waste management measures are not implemented; Proper sanitation and ablation facilities are not provided for use by site workers. The underground tanks are not emptied properly before decommissioning or damaged, leading to spillages. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<p>Access road:</p> <ul style="list-style-type: none"> The site is classified as having moderate potential arable land and high grazing value (AGIS Comprehensive Atlas), which will be impacted as a result of construction. In addition, the proposed access road will extend across land that is still zoned 'Agricultural'. The said property has however, not been used for agricultural activities in many years and no agricultural activities are taking place nearby. 	SITE	SHORT	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road: Once the road has been constructed, the said area will no longer be available for agricultural use. It should however, be noted that the affected area is very small (<600 m²) and no agricultural activities are taking place in the area.</p>	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road: Proper rehabilitation of the site after decommissioning could re-establish the agricultural potential of soil. This would however, depend on the intended end land use at the time.</p>	SITE	LONG	IMPROBABLE	LOW POSITIVE	LOW POSITIVE
	<p>Access road:</p> <ul style="list-style-type: none"> During construction of the access road, soil will be impacted in terms of soil structure, nutritional and chemical values when the vegetation and topsoil are removed, the area is sloped and the road is constructed. 	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road:</p> <ul style="list-style-type: none"> Direct impact on soil will continue i.t.o. soil structure, nutritional and chemical values and soil compaction due to the presence of the road. 	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road: The decommissioning activities will have an initial negative impact on the soil of the site in terms of disturbance (physical and biological properties). The proper rehabilitation of the area after decommissioning will however, have a positive impact on the soil.</p>	SITE	SHORT	PROBABLE	LOW NEUTRAL	LOW NEUTRAL
	<p>Access road:</p> <ul style="list-style-type: none"> Sediment transport and erosion may occur following the clearing of the area in preparation of construction. This could impact Samora Machel Street (R35) in terms of sand on the road surface and blockages to the associated storm water system. The impact is expected to be minimal since the area is small and relatively flat. 	SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road:</p> <ul style="list-style-type: none"> It is unlikely that soil erosion will take place during the operational phase, since the road will be tarred and storm water will be channelled into the existing municipal stormwater system. Samora Machel Street (R35) could however, be impacted if the required storm water management measures are not installed as part of the access road. 	SITE	LONG	IMPROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p>Access road: Soil erosion could occur if the site is not revegetated properly after decommissioning.</p>	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
LAND USE / SENSE OF PLACE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> The said site is zoned for business purposes (Business 2) and forms part of the approved Middelburg X26 development. It is currently not used for business purposes and is vacant. Heavy vehicles use the site as an informal parking area and waste is also dumped on site. The site is located in a secondary node area which purpose is to provide a support function to the CBD and to enhance access to convenience goods and services to all communities in town (SDF, 2015). The proposed filling station would thus not impact on the land use/sense of place since it would provide a service to the community as identified in the SDF (2015). 	LOCAL	LONG	HIGHLY PROBABLE	LOW POSITIVE	LOW POSITIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> The said site is zoned for business purposes (Business 2) and forms part of the approved Middelburg X26 development. It is currently not used for business purposes and is vacant. Heavy vehicles use the site as an informal parking area and waste is also dumped on site. The site is located in a secondary node area which purpose is to provide a support function to the CBD and to enhance access to convenience goods and services to all communities in town (SDF, 2015). The proposed filling station would thus not impact on the land use/sense of place since it would provide a service to the community as identified in the SDF (2015). 	LOCAL	LONG	HIGHLY PROBABLE	LOW POSITIVE	LOW POSITIVE	<p><u>Filling Station:</u></p> <p>The removal of the underground fuel tanks, decommissioning of the buildings and rehabilitation of the site would allow for a different land use on site. The impact will depend on the existing land use in the area.</p>	SITE	LONG	HIGHLY PROBABLE	LOW NEUTRAL	LOW NEUTRAL
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The proposed access road will extend across an area that is currently zoned for agricultural purposes. The area is however, not used for agriculture and is currently vacant. The Steve Tshwete Local Municipality intends to utilize the vacant area to the south of the site for future residential and business development (SDF, 2015). The proposed access road would thus not impact on the land use/sense of place since it would form part of the local road network and provide access to the filling station. 	LOCAL	LONG	HIGHLY PROBABLE	LOW NEUTRAL	LOW NEUTRAL	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The proposed access road will extend across an area that is currently zoned for agricultural purposes. The area is however, not used for agriculture and is currently vacant. The Steve Tshwete Local Municipality intends to utilize the vacant area to the south of the site for future residential and business development (SDF, 2015). The proposed access road would thus not impact on the land use/sense of place since it would form part of the local road network and provide access to the filling station. 	LOCAL	LONG	HIGHLY PROBABLE	LOW NEUTRAL	LOW NEUTRAL	<p><u>Access road:</u></p> <p>The decommissioning of the access road and rehabilitation of the area would allow for a different land use on site. The impact will depend on the existing land use in the area.</p>	SITE	LONG	HIGHLY PROBABLE	LOW NEUTRAL	LOW NEUTRAL
NATURAL VEGETATION/ ANIMAL LIFE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> NONE. The western portion of the site (±3000 m²) has been cleared of vegetation. The western and central portions of the site as well as a portion of the vacant property south of the site are being used by heavy vehicles as an informal parking area. The vegetation was thus removed and a gravel layer dumped on site to prevent wheel entrenchment. No Rand Highveld Grassland remains on the proposed filling station site. No grassland vegetation will thus be impacted upon by the construction of the filling station. 						<p><u>Filling Station:</u></p> <p>NONE since no further construction will take place.</p>						<p><u>Filling Station:</u></p> <p>No further impact on vegetation since no further construction activities will take place. Depending on the end land use of the site, proper rehabilitation and reinstatement of the vegetation after decommissioning will have a positive impact on the vegetation.</p>	SITE	LONG	IMPROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> The eastern portion of the site. (±2000 m²) comprises disturbed wetland vegetation, which will be directly impacted by the construction activities. Even though the wetland vegetation is not particularly rare or unique, it is still of conservation importance and mitigation measures would have to be implemented to ensure no impact outside of the development footprint. 	SITE	LONG	DEFINITE	MEDIUM NEGATIVE	MEDIUM NEGATIVE	<p><u>Filling Station:</u></p> <p>NONE. No further direct impact on wetland vegetation since all operational activities will be limited to the said site and no vegetation will be removed during the operational phase.</p>						<p><u>Filling Station:</u></p> <p>No further impact on vegetation since no further construction activities will take place. Depending on the end land use of the site, proper rehabilitation and reinstatement of the vegetation after decommissioning will have a positive impact on the wetland vegetation.</p>	SITE	LONG	IMPROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
NATURAL VEGETATION/ ANIMAL LIFE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Invasive plant species were noted on site by Venter (2017) in the areas associated with vegetation clearance and disturbances. The construction activities will thus have a positive impact in terms of the removal of the invasive species. However, invasive plant species could be introduced into new areas disturbed by construction, which are not rehabilitated. 	SITE	SHORT	PROBABLE	MEDIUM NEUTRAL	LOW NEUTRAL	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Alien plants could spread to adjacent properties should it be planted for landscaping purposes. This could impact on the wetland vegetation south of the site. 	LOCAL	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Alien plants could be introduced into areas rehabilitated as part of the decommissioning phase. This could impact on the vegetation of the surrounding area. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> No plant species of conservation concern were noted on site by Venter (2017). However, the orchid (<i>Orthochilus welwitschii</i> - previously <i>Eulophia welwitschii</i>) was noted in the wetland south of the site (outside of the site boundaries but within a 500 m radius). Mitigation measures would have to be implemented during the construction phase to ensure that the construction footprint is limited to the said site. 	LOCAL	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>NONE. No further direct impact on vegetation since all operational activities will be limited to the said site and no vegetation will be removed during the operational phase.</p>						<p><u>Filling Station:</u></p> <p>NONE. No further direct impact on vegetation since no vegetation will be removed during the decommissioning phase.</p>					
	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> No animal species were noted on site during the site visits. It is highly unlikely that animal species would permanently inhabit the site since the majority of the vegetation on site was removed and the animal habitat destroyed. In addition, the said site is located within a built up area and adjacent to busy roads. However, a large wetland and natural grassland is present south of the site, providing ample habitat for smaller animal species. Mitigation measures would have to be implemented during the construction phase to ensure that the construction footprint is limited to the said site. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>NONE. No further direct impact on animal life since no further construction activities will take place.</p>						<p><u>Filling Station:</u></p> <p>NONE. No further direct impact on animal life since no further construction activities will take place.</p>					
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> A large portion of the area over which the access road would extend is clear of vegetation due to heavy vehicles traversing the area. However, the proposed access road will still impact on a very small portion of disturbed grassland vegetation. 	SITE	LONG	DEFINITE	LOW NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>NONE. No further direct impact on vegetation since all vehicles will travel on the proposed access road and no vegetation will be removed during the operational phase.</p>						<p><u>Access road:</u></p> <p>No further impact on vegetation since no further construction activities will take place. Depending on the end land use of the site, proper rehabilitation and reinstatement of the vegetation after decommissioning will have a positive impact on the vegetation.</p>	SITE	LONG	IMPROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> A large portion of the area over which the access road would extend is clear of vegetation due to heavy vehicles traversing the area. However, the proposed access road will extend across a very small portion of disturbed wetland vegetation located south of the filling station site. Even though the wetland vegetation is not particularly rare or unique, it is still of conservation importance and mitigation measures would have to be implemented to ensure no impact outside of the development footprint. 	SITE	LONG	DEFINITE	MEDIUM NEGATIVE	MEDIUM NEGATIVE	<p><u>Access road:</u></p> <p>NONE. No further direct impact on vegetation since all vehicles will travel on the proposed access road and no vegetation will be removed during the operational phase.</p>						<p><u>Access road:</u></p> <p>No further impact on vegetation since no further construction activities will take place. Depending on the end land use of the area, proper rehabilitation and reinstatement of the vegetation after decommissioning will have a positive impact on the wetland vegetation.</p>	SITE	LONG	IMPROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> No plant species of conservation concern were noted on site by Venter (2017). However, the orchid (<i>Orthochilus welwitschii</i> - previously <i>Eulophia welwitschii</i>) was noted in the wetland south west of the proposed access road. Mitigation measures would have to be implemented during the construction phase to ensure that the construction footprint is limited to the said site. 	LOCAL	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>NONE. No further direct impact on vegetation since all vehicles will travel on the proposed access road and no vegetation will be removed during the operational phase.</p>						<p><u>Access road:</u></p> <p>NONE. No further direct impact on vegetation since no vegetation will be removed during the decommissioning phase.</p>					



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	PREDICTED IMPACT OPERATIONAL PHASE AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
NATURAL VEGETATION/ ANIMAL LIFE	<p><u>Access road:</u></p> <ul style="list-style-type: none"> No animal species were noted on site during the site visits. It is highly unlikely that animal species would permanently inhabit the site since a large portion of the area over which the access road would extend is clear of vegetation due to heavy vehicles traversing the area. In addition, the said site is located adjacent to a busy road. However, a large wetland and natural grassland is present southwest of the site, providing ample habitat for smaller animal species. Mitigation measures would have to be implemented during the construction phase to ensure that the construction footprint is limited to the said site. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>NONE. No further direct impact on animal life since no further construction activities will take place.</p>						<p><u>Access road:</u></p> <p>NONE. No further direct impact on animal life since no further construction activities will take place.</p>					
SURFACE WATER/SENSITIVE LANDSCAPES	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> A seep wetland (identified on site by Venter, 2015; Figure 5.15) would be directly impacted by the construction of the filling station. The wetland receives inflows (both surface and subsurface) from the upslope areas and output is via a storm water drain leading under La Roca Boulevard. It should be noted that approximately 3000m² of the seep wetland (western portion of the site) has been cleared for truck parking and covered with a soil/gravel layer. The wetland in the eastern portion of the site (±2000m²) is still intact, but has also been impacted as indicated in Section 5.9.4.2. The downstream portion of the wetland (historically extending northwest of the site) has been destroyed through the development of roads and the SAE Business Park. There is thus no connectivity from the main portion of the wetland (south of the site) to any downstream wetlands. According to Sharratt (2017), the hydrology and associated vegetation, as well as soils, have all been largely modified relative to the original state and extent of the seepage wetland. Much of the subsurface seepage was converted to surface flows along preferential flow paths and ponding of water occurred within trenches, along pipelines and within disturbed areas. Under natural conditions, water inputs would have been mainly by subsurface flows (within the soil profile) from upslope areas (to the southwest of the site). The manner in which water flowed through the landscape has thus been changed substantially. Even though the wetland is highly impacted, all wetlands are of high conservation importance, especially if rehabilitation is possible (Sharratt, 2017; Venter, 2017). According to Venter (2017), the hydrology of the site may be altered by excavations (to install the underground tanks and for foundations) and by changes in the storm water runoff. No mitigation measures can be implemented to prevent the direct impact of the construction activities on the on-site wetland. However, mitigation measures can be implemented to ensure that the wetland upstream of the site (towards the south and south west; Figure 5.15) is not impacted during the construction phase. 	SITE	PERMANENT	DEFINITE	MEDIUM TO HIGH NEGATIVE	MEDIUM TO HIGH NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> The wetland on site would continue to be impacted upon as a result of changes in the hydrology of the site due to altered stormwater runoff, the presence of the underground tanks, services, buildings, etc. No wetlands are located downstream of the site that could be impacted upon by fuel spillages, altered surface water flow, etc. The operation of the filling station would not have a direct impact on the upstream wetland located south and south west of the site in terms of altered hydrological regimes, pollution, etc. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	MEDIUM NEGATIVE	<p><u>Filling Station:</u></p> <p>During the decommissioning phase, building rubble and any polluted soil will be removed from the site and disposed of accordingly. The said area will then be rehabilitated in order to establish a vegetation cover and restore water flow across the site.</p>	SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE																			
	AREA: Site - 5000 m ² Access Road - 600 m ²					AREA: Site - 5000 m ² Access Road - 600 m ²					AREA: Site - 5000 m ² Access Road - 600 m ²																			
	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)															
SURFACE WATER/SENSITIVE LANDSCAPES	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> No direct impact on surface water since no rivers or streams are present on site or near the site. The closest river/streams are DuToitspruit (±1.8 km northwest of the site) and the Vaalbankspruit (±2.7 km northeast of the site). Storm water runoff flows in a north easterly direction towards a culvert that forms part of the municipal storm water infrastructure. The removal of the remaining vegetation and the earthworks required during the construction phase would result in changed runoff patterns, which could result in soil erosion if proper storm water control measures are not implemented. This could impact on the culvert located underneath La Roca Boulevard in terms of blockages. The impact is expected to be minimal since the site is small and relatively flat. 					SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> No direct impact on surface water since no rivers or streams are present on site or near the site. The closest river/streams are DuToitspruit (±1.8 km northwest of the site) and the Vaalbankspruit (±2.7 km northeast of the site). The buildings, parking area, etc. will increase the impermeable surfaces on site and decrease the infiltration into the soil. Increased runoff is therefore expected from site. If not well managed, this may result in erosion and sedimentation and potential blockages of the culvert. Subsurface flow and surface water runoff from the upstream wetland could also impact on the proposed filling station if this flow is not taken into account as part of the storm water management of the site. 					SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>Depending on the end land use, the said area will be rehabilitated and water flow through the site restored.</p>					SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Filling Station:</u></p> <p>Some soil pollution may already be taking place on site as a result of parking trucks that leak oil as well as the dumping of waste/litter/coal. This could have impacted on the surface water runoff quality from the site.</p> <ul style="list-style-type: none"> During the construction phase, surface water runoff may also be polluted if waste management measures are not implemented and proper ablution and sanitation facilities are not provided for the site workers to use on site. 					SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Indirect pollution of surface water runoff could take place if: <ul style="list-style-type: none"> the sewer system does not have sufficient capacity and is not maintained; proper waste management measures are not implemented. adequate oil separators and litter traps are not installed and maintained. 					SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>Surface water runoff may be polluted if:</p> <ul style="list-style-type: none"> the heavy vehicles used during decommissioning are not maintained/repared resulting in oil leaks and fuel spills; waste management measures are not implemented; the underground tanks are not emptied properly before decommissioning or damaged, leading to spillages. 					SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<p><u>Filling Station:</u></p> <p>Some soil pollution may already be taking place on site as a result of parked trucks that leak oil as well as the dumping of waste/litter/coal. This could have impacted on the surface water runoff quality from the site.</p> <ul style="list-style-type: none"> During the construction phase, surface water runoff may also be polluted if the construction vehicles are not maintained/repared resulting in oil leaks and fuel spills. 					SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Surface water runoff may be polluted if fuel spills (minor or major) occur and remedial action is not immediately taken. In addition, vehicles may have small oil leaks resulting in oil accumulating on the forecourt surface over time. Indirect pollution of surface water runoff and downstream resources could thus take place if mitigation measures (e.g. oil separators) are not in place. 					LOCAL	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>Surface water runoff may be polluted if:</p> <ul style="list-style-type: none"> the heavy vehicles used during decommissioning are not maintained/repared resulting in oil leaks and fuel spills; waste management measures are not implemented; the underground tanks are not emptied properly before decommissioning or damaged, leading to spillages. 					SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE																			
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	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)															
SURFACE WATER/SENSITIVE LANDSCAPES	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The proposed access road will directly impact on a very small area of seep wetland (Figure 5.15) that has been cleared of vegetation as a result of trucks traversing the area. According to Venter (2017), the hydrology of the seep wetland may be altered by the excavations required for the road foundations as well as changes in the storm water runoff. No mitigation measures can be implemented to prevent the direct impact of the construction activities on the on-site wetland. However, mitigation measures can be implemented to ensure that the wetland upstream of the site (towards the south and south west; Figure 5.15) is not impacted during the construction phase. 					SITE	PERMANENT	DEFINITE	MEDIUM TO HIGH NEGATIVE	MEDIUM TO HIGH NEGATIVE	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The seep wetland would continue to be impacted upon as a result of changes in the hydrology of the site due to altered stormwater runoff and the presence of the road. 					SITE	LONG	PROBABLE	MEDIUM NEGATIVE	MEDIUM NEGATIVE	<p><u>Access road:</u></p> <p>After decommissioning, the said area will be rehabilitated in order to re-establish a vegetation cover and restore water flow across the site.</p>					SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> Surface water runoff flows in a north easterly direction towards a culvert that forms part of the municipal storm water infrastructure. The removal of the remaining vegetation and the earthworks required during the construction of the access road would result in changed runoff patterns, which could result in soil erosion if proper storm water control measures are not implemented. This could impact Samora Machel Street (R35) in terms of sand on the road surface and blockages to the associated storm water system. The impact is expected to be minimal since the area is small and relatively flat. 					SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The access road will increase the impermeable surfaces in the area and decrease infiltration into the soil. Increased runoff is therefore expected from the road surface. If not well managed, this may result in erosion adjacent to the road, sedimentation in the downstream areas and an impact on Samora Machel Street (R35). 					SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>Depending on the end land use, the said area will be rehabilitated and water flow through the site restored.</p>					SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE				
	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
GROUNDWATER	<p>PREDICTED IMPACT CONSTRUCTION PHASE</p> <p>AREA: Site - 5000 m² Access Road - 600 m²</p>					<p>PREDICTED IMPACT OPERATIONAL PHASE</p> <p>AREA: Site - 5000 m² Access Road - 600 m²</p>					<p>PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE</p> <p>AREA: Site - 5000 m² Access Road - 600 m²</p>				
	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	LOCAL	LONG	IMPROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Hansmeyer (2004) did not indicate the presence of a perched water table for the proposed filling station site. Due to the depth of the groundwater table (between 4.82 and 7.7 mbgl), it is highly unlikely that the general construction activities (foundations and trenches) will impact on the groundwater. However, the excavation of the tank farm for the underground tanks may impact on the groundwater of the site depending on the depth of the excavation required. If groundwater is encountered, it could also impact on the excavation activities in terms of sidewall stability etc. The relatively shallow depth to groundwater should be taken into account by the engineer when designing the underground storage tank area. 					<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Currently, the groundwater quality in the area is exceptional. According to Van der Walt (2017), the inferred groundwater flow is in a north easterly direction and the depth to groundwater is between 4.82 and 7.7 mbgl. There is thus a small buffer zone between the shallow (<4 mbgl) underground fuel tanks and the water table. Taking the inferred groundwater flow direction, spatial distribution of the identified receptors and type of use into account, it can be concluded that water supply boreholes BH1, BH3 and BH4 may be at the highest risk of being impacted, should an unforeseen release of petroleum product occur due to a leak or spill incident. Although boreholes BH2 and BH5 are not located directly down-gradient of the site, it must be taken into account that possible impacts on these boreholes cannot be excluded altogether as abstraction from these boreholes could cause a cone of depression over a certain radius of influence. However, it is understood that the filling station will comply with the latest standards and that the necessary mitigation measures and early warning systems will be in place to minimise any potential impact on the environment and surrounding groundwater users. From a geohydrological perspective, it is deemed unlikely that the development of the filling station will have a negative impact on the identified receptors. 					<p><u>Filling Station:</u></p> <p>During decommissioning, groundwater pollution could take place if the underground tanks are not emptied properly before decommissioning or damaged, leading to spillages.</p>				



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
GROUNDWATER	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Hansmeyer (2004) did not indicate the presence of a perched water table for the proposed filling station site. However, a highly impacted seep wetland was identified on site by Venter (2017). It should be noted that geotechnical test pits are excavated up to a depth of 2.5m, whereas only 50 cm of soil is investigated by the wetland specialist for hydromorphic characteristics. According to Van der Walt (2017), the hydraulic connection between the wetland and the groundwater in the area is currently unknown. Although a perched water table is not present, the presence of the seep wetland could impact on the construction activities in terms of site drainage if mitigation measures are not implemented. 	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Hansmeyer (2004) did not indicate the presence of a perched water table for the proposed filling station site. However, a seep wetland was identified on site by Venter (2017). It should be noted that geotechnical test pits are excavated up to a depth of 2.5m, whereas only 50 cm of soil is investigated by the wetland specialist for hydromorphic characteristics. According to Van der Walt (2017), the hydraulic connection between the wetland and the groundwater in the area is currently unknown. Although a perched water table is not present, the presence of the seep wetland could impact on the buildings and infrastructure in terms of site moisture if mitigation measures are not implemented. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>After decommissioning, the said area will be rehabilitated in order to re-establish a vegetation cover and restore water flow across the site. This could have a positive impact on the seep wetland.</p>	SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
	<p><u>Access road:</u></p> <p>NONE. According to Van der Walt (2017), the depth to groundwater is between 4.82 and 7.7 mbgl. Due to the depth of the groundwater table, it is not expected that the construction of the access road will impact on the groundwater.</p>						<p><u>Access road:</u></p> <p>NONE. It is not expected that the utilization of the access road will impact on the groundwater.</p>						<p><u>Access road:</u></p> <p>NONE. It is not expected that decommissioning of the access road will impact on the groundwater. The potential impact on the groundwater would depend on the end land use of the site.</p>					
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The access road would extend across an area with a perched water table (Hansmeyer, 2004; Figure 5.9b). The construction of the access road could thus impact on the perched water table depending on the depth of excavations required for road foundations. This impact cannot be mitigated. The access road would also extend across a highly impacted seep wetland. The presence of the seep wetland and perched water table could impact on the construction activities in terms of site drainage if mitigation measures are not implemented. 	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The access road would extend across an area with a perched water table (Hansmeyer, 2004; Figure 5.9b) as well as a highly impacted seep wetland. The presence of the seep wetland and perched water table could impact on the road in terms of drainage, potholes, etc. if mitigation measures (e.g. subsurface drainage) are not implemented. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>After decommissioning, the said area will be rehabilitated in order to re-establish a vegetation cover and restore water flow across the site. This could have a positive impact on the seep wetland.</p>	SITE	LONG	PROBABLE	MEDIUM POSITIVE	MEDIUM POSITIVE
<p><u>Filling Station and Access road:</u></p> <p>NONE. No groundwater abstraction will take place at the filling station and therefore there will be no impact on groundwater quantity/volumes.</p>						<p><u>Filling Station and Access road:</u></p> <p>NONE. No groundwater abstraction will take place at the filling station and therefore there will be no impact on groundwater quantity/ volumes.</p>						<p><u>Filling Station and Access road:</u></p> <p>NONE. It is not expected that groundwater abstraction will take place during decommissioning and therefore there will be no impact on groundwater quantity/ volumes.</p>						



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
SITES OF ARCHAEOLOGICAL/CULTURAL INTEREST	<u>Filling Station and Access road:</u> NONE. No sites of archaeological/cultural interest are known to be present on site.						<u>Filling Station and Access road:</u> NONE. No sites of archaeological/cultural interest are known to be present on site.						<u>Filling Station and Access road:</u> NONE. No sites of archaeological/cultural interest are known to be present on site.					
	<u>Filling Station and Access road:</u> <ul style="list-style-type: none"> According to Fourie (2017), the development will be located on a Formation with a Low Palaeontological sensitivity, therefore there is a low possibility that significant fossils will be present in the bedrock of these geological units. The direct impact on the palaeontology will depend on the depth of the excavations required for the buildings, underground tanks, access road and associated infrastructure. 	SITE	PERMANENT	IMPROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station and Access road:</u> NONE. The operational activities will have no direct or indirect impact on the palaeontology of the site as no further construction will take place.						<u>Filling Station and Access road:</u> NONE. The decommissioning activities will have no direct or indirect impact on the palaeontology of the site as no further construction will take place.					
AIR QUALITY	<u>Filling Station:</u> <ul style="list-style-type: none"> Dust generation and vehicle emissions due to construction activities and use of heavy machinery could impact on site workers, the adjacent businesses and their customers and road users. The extent of the impact would depend on the time of year, wind direction and velocity. The air quality of the site and surroundings could be impacted in terms of odours if: <ul style="list-style-type: none"> the chemical toilets used during construction are not maintained; proper waste management measures are not implemented. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> <ul style="list-style-type: none"> During the operational phase, no direct impact on the air quality is anticipated as the development will be supplied with electricity. In addition, the parking areas would be paved and therefore no dust generation will take place. The air quality of the site and surroundings could be impacted in terms of: <ul style="list-style-type: none"> odours if the sewer system does not have capacity and is not maintained resulting in sewage leaks; odours if proper waste management measures are not implemented; fumes from the fuel pumps if these facilities are not managed according to the set requirements; vent gasses from vent pipes and the interceptor chamber if the vent pipes are not positioned away from buildings; odours and gasses if petroleum spills occur and the necessary contingency plan is not in place. This could impact on the various business owners and customers. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station:</u> Dust generation and vehicle emissions due to decommissioning activities and use of heavy machinery could impact on site workers and the adjacent land users. The extent of the impact would depend on the time of year, wind direction and velocity and current land use in the area.	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<u>Access road:</u> <ul style="list-style-type: none"> Dust generation and vehicle emissions due to construction activities and use of heavy machinery could impact on site workers and road users along Samora Machel Street (R35). The extent of the impact would depend on the time of year, wind direction and velocity. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <ul style="list-style-type: none"> NONE. During the operational phase, no direct impact on the air quality is anticipated since the proposed access road would be tarred and therefore no dust generation will take place. Exhaust fumes from vehicles travelling on the access road are not expected to cause an additional impact on the air quality since vehicles already travelling in the area will be intercepted and no additional traffic will be created. 						<u>Access road:</u> Dust generation and vehicle emissions due to decommissioning activities and use of heavy machinery could impact on site workers and the adjacent land users. The extent of the impact would depend on the time of year, wind direction and velocity and current land use in the area.	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
VISUAL	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Due to the flat topography of the area, the construction activities will be highly visible from all the adjacent businesses (Retail City, Barloworld Toyota, SAE Business Park, et.) and adjacent roads. The site should thus be kept neat and tidy during the construction phase. 	SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Due to the flat topography of the area, the operational activities will be highly visible from all the adjacent businesses and roads, which lends itself perfectly in terms of visibility for a filling station. However, it would be important to keep the site neat and tidy at all times and ensure that the filling station is well maintained to prevent any visual impacts on the general road user and adjacent businesses. 	SITE	LONG	DEFINITE	MEDIUM NEUTRAL	LOW NEUTRAL	<p><u>Filling Station:</u></p> <p>The decommissioning activities could impact on adjacent land owners and road users depending on the land use of the area at the time of decommissioning. If the site is rehabilitated and not developed again, the removing of building rubble and revegetation of the site could have a positive impact in terms of visual aspects.</p>	SITE	LONG	PROBABLE	LOW NEUTRAL	LOW NEUTRAL
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> Due to the flat topography of the area, the construction activities will be highly visible from the adjacent Samora Machel Street (R35) and nearby businesses (Retail City, Barloworld Toyota, SAE Business Park, etc.). The site should thus be kept neat and tidy during the construction phase. 	SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <ul style="list-style-type: none"> The access road will be highly visible to road users from Samora Machel Street (R35) and will therefore provide easy access to the filling station. However, it would be important to ensure that the road is well maintained to ensure that customers can utilize the said road. 	SITE	LONG	DEFINITE	MEDIUM NEUTRAL	LOW NEUTRAL	<p><u>Access road:</u></p> <p>The decommissioning activities could impact on adjacent land owners and road users depending on the land use of the area at the time of decommissioning. If the site is rehabilitated and not developed again, the removing of building rubble and revegetation of the site could have a positive impact in terms of visual aspects.</p>	SITE	LONG	PROBABLE	LOW NEUTRAL	LOW NEUTRAL
NOISE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> In general, the ambient noise level of the site is relatively high since the site is located adjacent to Samora Machel Street (R35), La Roca Boulevard and established businesses. Heavy machinery used during the construction phase will contribute to increased ambient noise levels in the area, which could impact on the construction workers and the adjacent land users and road users. In addition, the surrounding land and road users could be impacted upon should blasting be required. The impact would however, be short term. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> The operational activities of the filling station could impact on the ambient noise level of the site. The impact would not be significant since the site is located adjacent to Samora Machel Street (R35), La Roca Boulevard and established businesses. In addition, no residences are located nearby. 	SITE	LONG	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>In general, the use of heavy machinery for decommissioning activities would impact on the surrounding land users in terms of noise. The impact would depend on the land use at the time.</p>	SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE
	<p><u>Access road:</u></p> <ul style="list-style-type: none"> In general, the ambient noise level of the site is relatively high since the site is located adjacent to Samora Machel Street (R35) and near established businesses. Heavy machinery used during the construction phase will contribute to increased ambient noise levels in the area, which could impact on the construction workers and the adjacent land users and road users. The impact would however, be short term. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road:</u></p> <p>NONE. The utilization of the access road should not have any impact on the ambient noise levels, since existing traffic along Samora Machel Street (R35) would utilize this road to access the filling station.</p>						<p><u>Access road:</u></p> <p>In general, the use of heavy machinery for decommissioning activities would impact on the surrounding land users in terms of noise. The impact would depend on the land use at the time.</p>	SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE									
	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)					
TRAFFIC	<p>AREA: Site - 5000 m² Access Road - 600 m²</p> <p><u>Filling Station:</u></p> <ul style="list-style-type: none"> All construction activities will take place on site and will not directly impact on traffic. The delivery of building material during the construction period could lead to a slight increase in traffic on Samora Machel Street (R35) and La Roca Boulevard. The deliveries would however, not occur on a continuous basis. 					SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE	<p>AREA: Site - 5000 m² Access Road - 600 m²</p> <p><u>Filling Station:</u></p> <ul style="list-style-type: none"> NONE. All operational activities will take on site and will thus not have a direct impact on traffic in the area. In general, filling stations intercept trips from the background traffic as opposed to other developments that generate additional trips. The operational activities should thus not lead to an increase in traffic in the area. However, the interception of traffic could cause minor disruptions if not considered thoroughly (Kotze, 2017). These potential impacts are indicated as part of the Access road. According to Kotze (2017), the proposed filling station can comply with the minimum standards and required minimum distances as per the generic filling station design manual. 					SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE
	<p><u>Filling Station and Access roads:</u></p> <p>NONE. No road/intersection improvements are required apart from the proposed access roads.</p>										<p><u>Filling Station and Access roads:</u></p> <ul style="list-style-type: none"> NONE. According to Roberts (2017), 963 vph travel along Samora Machel Street (R35), in the worst case. This road operates satisfactory at 51% of its link capacity. Similarly, La Roca Boulevard with a maximum flow of 17% of its link capacity operates satisfactory. In addition, the intersection (La Roca Boulevard and Samora Machel Street) is expected to operate at satisfactory levels up to 2019. Apart from the proposed access road and roundabout, no other road/intersection improvements are required. 					<p><u>Filling Station and Access roads:</u></p> <p>NONE. No road/intersection improvements will be required during the decommissioning phase.</p>				



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
TRAFFIC	<p><u>Access road - Samora Machel Street (R35):</u></p> <ul style="list-style-type: none"> The construction and connection of the proposed access road from Samora Machel Street (R35) could impact on the traffic utilizing this roads. The impact should however, be of short duration. Mitigation measures in terms of road safety would have to be implemented, especially during peak hours and at night time. 	SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road - Samora Machel Street (R35):</u></p> <ul style="list-style-type: none"> Access to the proposed filling station site will be provided from from Samora Machel Street (R35) via a left-in left-out access road (Roberts, 2017). According to Roberts (2017), there are no road network concerns as the proposed access can accommodate the short and long-term road layouts (Roberts, 2017). However, the general road users and visitors to the filling station could be impacted upon if the proposed access road to the site was not constructed according to approved designs. Accidents could occur if a barrier median on Samora Machel Street (R35) was not constructed to prevent right-in and right-out unsafe movements as recommended by Roberts (2017). In addition, the utilization of the access as a short cut (to by-pass the Samora Machel Street/La Roca Boulevard intersection) could pose a safety risk at the filling station in terms of accidents. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road - Samora Machel Street (R35):</u></p> <p>The decommissioning of the access road could impact on the traffic utilizing Samora Machel Street (R35). The impact should however, be of short duration. Mitigation measures in terms of road safety would have to be implemented, especially during peak hours and at night time.</p>	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE
	<p><u>Access road - La Roca Boulevard:</u></p> <ul style="list-style-type: none"> The construction of the proposed roundabout in La Roca Boulevard could impact on the traffic utilizing La Roca Boulevard to access Middelburg Mall, Retail City and other businesses in the area. The impact should however, be of short duration. Mitigation measures in terms of road safety would have to be implemented, especially during peak hours and at night time. 	SITE	SHORT	DEFINITE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road - La Roca Boulevard:</u></p> <ul style="list-style-type: none"> Access to the proposed filling station site will be provided from a new roundabout in La Roca Boulevard (Roberts, 2017). According to Roberts (2017), there are no road network concerns as the proposed access can accommodate the short and long-term road layouts (Roberts, 2017). However, the general road users, adjacent businesses and visitors to the Middelburg Mall could be impacted upon if the proposed roundabout was not constructed according to approved designs. The utilization of the roundabout access in La Roca Boulevard could also lead to accidents if the roundabout was not constructed according to approved designs. 	LOCAL	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Access road - La Roca Boulevard:</u></p> <p>The decommissioning of the roundabout could impact on the traffic utilizing La Roca Boulevard. The impact should however, be of short duration. Mitigation measures in terms of road safety would have to be implemented, especially during peak hours and at night time.</p>	SITE	SHORT	PROBABLE	LOW NEGATIVE	LOW NEGATIVE
INTERESTED AND AFFECTED PARTIES	<p><u>Filling Station and Access road:</u></p> <p>±20 temporary job opportunities would be provided during the construction phase.</p>	SITE	SHORT	DEFINITE	MEDIUM POSITIVE	MEDIUM POSITIVE	<p><u>Filling Station and Access road:</u></p> <p>±10 permanent job opportunities would be provided during the operational phase, which could aid in the economic stability of a few families</p>	SITE	LONG	DEFINITE	MEDIUM POSITIVE	MEDIUM POSITIVE	<p><u>Filling Station and Access road:</u></p> <p>The impact of the decommissioning of the development in terms of interested and affected parties will depend on the character of the area at that time as well as the intended end land use.</p>					
	<p><u>Filling Station and Access road:</u></p> <p>Contractors working on site could be directly impacted upon if the necessary safety and occupational health measures are not adhered to.</p>	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station:</u></p> <p>The employees, adjacent land users and customers at the filling could be directly impacted upon should the necessary safety measures not be implemented at the filling station and a fire/explosion occurs.</p>	SITE	LONG	HIGHLY PROBABLE	HIGH NEGATIVE	LOW NEGATIVE						

ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
INTERESTED AND AFFECTED PARTIES	Filling Station: NONE.						Filling Station: <ul style="list-style-type: none"> The proposed filling station will be convenient (in terms of refuelling and purchasing items such as bread and milk) for employees working long hours at the Middelburg Mall. The development will also be convenient for visitors from surrounding towns to the Middelburg Mall as they would no longer have to travel past the Middelburg Mall into town to refuel (Urban Dynamics, 2017). 	REGIONAL	LONG	HIGHLY PROBABLE	MEDIUM POSITIVE	LOW POSITIVE	Filling Station and Access road: The impact of the decommissioning of the development in terms of interested and affected parties will depend on the character of the area at that time as well as the intended end land use.					
	Filling Station: NONE						Filling Station: <ul style="list-style-type: none"> The proposed filling station will have an initial detrimental impact on the filling stations in adjacent local markets. According to Kotze (2017), a total of 155 000 liters/month will be gained from the four competitor sites indicated in Table 4.6. The remainder of the sales will be gained from sites and markets outside the study area The impact on any of the competitor sites will not be enough to impact on the feasibility of the individual sites surveyed. Annual traffic growth in the area will ensure that short terms losses are regained within 3 to 4 years (Kotze, 2017). Roberts (2017) indicated that the other filling station sites within Middelburg are located in other trading areas and are not expected to be materially affected in terms of competition. If there is an impact it is expected to be marginal. 	LOCAL	LONG	HIGHLY PROBABLE	LOW NEGATIVE	LOW NEGATIVE						
	Filling Station: NONE						Filling Station: <ul style="list-style-type: none"> Development of the site will improve the aesthetics of the area since the site would no longer be used as an informal parking area for heavy vehicles. In addition, the property would no longer be vacant, which would improve security in the area and make the site unavailable for informal settlement. 	LOCAL	LONG	HIGHLY PROBABLE	MEDIUM POSITIVE	LOW POSITIVE						
	Filling Station: NONE						Filling Station: <ul style="list-style-type: none"> According to Kotze (2017) and Roberts (2017), the site is feasible from a fuel sales point of view. 	SITE	LONG	DEFINITE	LOW POSITIVE	LOW POSITIVE						
	Filling Station: <ul style="list-style-type: none"> The connection of the services (water, electricity, sewage) to the municipal infrastructure could impact on the land users in the area in terms of service interruptions. 	SITE	SHORT	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	Filling Station: <ul style="list-style-type: none"> The customers and employees at the filling station as well as surrounding land users could be impacted upon if the services (water, sewage, storm water, electricity, roads) do not have sufficient capacity for the proposed development. 	SITE	LONG	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE						



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
INTERESTED AND AFFECTED PARTIES	<u>Filling Station and Access road:</u> <ul style="list-style-type: none"> The municipality and its users could be impacted if the bulk water pipeline extending along Samora Machel Street (R35) is damaged in anyway by the construction activities. 	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station and Access road:</u> <ul style="list-style-type: none"> The municipality and its users could be impacted if the bulk water pipeline extending along Samora Machel Street (R35) is damaged in anyway during the operational activities. 	SITE	SHORT	PROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Filling Station and Access road:</u> The impact of the decommissioning of the development in terms of interested and affected parties will depend on the character of the area at that time as well as the intended end land use.					
	<u>Access road:</u> <ul style="list-style-type: none"> Mr. G. Strydom (lessee) could be impacted upon if the access road is constructed across the Public Open Space on the eastern boundary of the site without obtaining his consent. This is however, highly unlikely as the access road was re-aligned as indicated in Figure 4.3. 	SITE	LONG	IMPROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<u>Access road:</u> <ul style="list-style-type: none"> Mr. G. Strydom (lessee) would continue to be impacted upon if the access road was constructed across the Public Open Space on the eastern boundary of the site without obtaining his consent. This is however, highly unlikely as the access road was re-aligned as indicated in Figure 4.3. 	SITE	LONG	IMPROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE						
	<u>Access road:</u> <ul style="list-style-type: none"> The Steve Tshwete Local Municipality will be impacted upon if the access road is constructed across the Remainder of Portion 27 of Middelburg Town and Townlands 287 JS without obtaining permission from the municipality before construction takes place. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEUTRAL	<u>Access road:</u> <ul style="list-style-type: none"> The Steve Tshwete Local Municipality would continue to be impacted upon if the access road was constructed across the Remainder of Portion 27 of Middelburg Town and Townlands 287 JS without obtaining permission from the municipality. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEUTRAL						
	<u>Access road:</u> <ul style="list-style-type: none"> The South African National Roads Agency (SANRAL) could be impacted upon if permission was not obtained for the proposed left-in left-out access road from Samora Machel Street (R35) before construction commenced. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEUTRAL	<u>Access road:</u> <ul style="list-style-type: none"> The South African National Roads Agency (SANRAL) would continue to be impacted upon if permission was not obtained for the proposed access road from Samora Machel Street (R35) before construction commenced. 	SITE	LONG	HIGHLY PROBABLE	MEDIUM NEGATIVE	LOW NEUTRAL						
	<u>Access road:</u> NONE						<u>Access road:</u> <ul style="list-style-type: none"> The new roundabout will benefit Barloworld Toyota by facilitating easy access to and from the business and preventing illegal crossings. 	SITE	LONG	PROBABLE	MEDIUM POSITIVE	LOW POSITIVE						



ENVIRONMENTAL FEATURE(S)	PREDICTED IMPACT CONSTRUCTION PHASE					PREDICTED IMPACT OPERATIONAL PHASE					PREDICTED IMPACT PHASE: DECOMMISSIONING PHASE							
	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)	AREA: Site - 5000 m ² Access Road - 600 m ²	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (PRE-MITIGATION)	SIGNIFICANCE (POST MITIGATION)
INTERESTED AND AFFECTED PARTIES	<p><u>Filling Station</u> NONE</p>						<p><u>Filling Station:</u></p> <ul style="list-style-type: none"> Potential fuel leakages and/or spillages on site may have a negative impact on surrounding groundwater users. Taking the inferred groundwater flow direction, spatial distribution of the identified receptors and type of use into account, it can be concluded that water supply boreholes BH1, BH3 and BH4 may be at the highest risk of being impacted, should an unforeseen release of petroleum product occur due to a leak or spill incident. Although boreholes BH2 and BH5 are not located directly down-gradient of the site, it must be taken into account that possible impacts on these boreholes cannot be excluded altogether as abstraction from these boreholes could cause a cone of depression over a certain radius of influence. However, it is understood that the filling station will comply with the latest standards and that the necessary mitigation measures and early warning systems will be in place to minimise any potential impact on the environment and surrounding groundwater users. From a geohydrological perspective, it is deemed unlikely that the development of the filling station will have a negative impact on the identified receptors. 	LOCAL	LONG	IMPROBABLE	MEDIUM NEGATIVE	LOW NEGATIVE	<p><u>Filling Station and Access road:</u> The impact of the decommissioning of the development in terms of interested and affected parties will depend on the character of the area at that time as well as the intended end land use.</p>					
	<ul style="list-style-type: none"> Other impacts in terms of the natural environment, noise, visual, traffic, odour etc. are indicated in the above-mentioned sections. 						<ul style="list-style-type: none"> Other impacts in terms of the natural environment, noise, visual, traffic, etc. are indicated in the above-mentioned sections. 											



7.8 'No project' impacts

The 'no project option' is the alternative of not going ahead with the proposed development. The 'no project option' is only considered if it is found that the development will have significant negative impacts on the environment, which cannot be mitigated or managed.

If the 'no project option' in terms of the proposed project was exercised, it would mean that:

- The applicant would have to investigate other land uses (e.g. retail) for the site i.e. in line with the existing zoning (i.e. Business 2);
- The site would remain vacant;
- The applicant would have to discard the proposed development plans;
- The applicant would have to investigate alternative sites for the proposed filling station;
- The applicant would have to sell the property;
- Potential job opportunities would be lost should the project not go ahead.

7.9 Cumulative impacts

The development of the said site will have a direct impact on a seep wetland present on site (Figure 5.15). As indicated in Section 5.9, approximately 5000m² of seep wetland will be lost through the establishment of the filling station.

It should however be noted that the seep wetland on site has been highly modified. The vegetation on most of the site was cleared and the area covered with a soil/gravel layer. There is also no connectivity from the site to any downstream wetlands, rivers, streams or drainage areas. There is limited habitat connectivity with the upslope seep wetland as a result of cleared vegetation south of the site (Sharratt, 2017).

According to Sharratt (2017), adjacent developments and activities on site substantially altered the manner in which water flows through the landscape. Much of the subsurface seepage was converted to surface flows along preferential flow paths and ponding of water occurs within trenches, along pipelines and within disturbed areas.

The proposed development together with all other developments in Middelburg would impact on the services (water and sewage) provided by the local municipality. The Steve Tshwete Local Municipality must ensure that the required services can be provided and that there is sufficient capacity at the sewage works, waste site, water works and substations to cater for this development.

If management measures are not in place to deal with possible petroleum spills, it could lead to soil, surface water and groundwater pollution, which over time could have a cumulative impact on these environments. Possible product leakages from the underground tanks could impact on the groundwater if the product installation does not comply with the latest standards and the necessary mitigatory measures (e.g. early warning systems) are not in place. The only other source of possible petroleum hydrocarbon contamination within the area is the newly constructed filling station on the corner of Samora Machel Street (R35) and Spring Street.



8. ENVIRONMENTAL MANAGEMENT PROGRAMME

8.1 Definition and objectives

The Environmental Management Programme (EMPr) was compiled in accordance with Appendix 4 of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) as well as the Western Cape Guideline for Environmental Management Plans (Lochner, 2005).

According to the Western Cape Guideline, an Environmental Management Programme (EMPr) can be defined as:

An environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced.

According to the EIA Regulations, 2014 (as amended), an EMPr must include-
(d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed or mitigated as identified through the environmental impact assessment process for all phases of the development including -
(i) planning and design;
(ii) pre-construction and construction activities;
(iii) operation or undertaking of the activity;
(iv) rehabilitation of the environment; and
(v) closure, where relevant.

This section therefore provides an indication of the mitigation measures to be implemented by the site operator (and site workers) in order to reduce the potential impacts identified (see Section 7).

8.2 Contact details

An EMPr must include -
(a) details of-
(i) the EAP who prepared the environmental management programme; and
(ii) the expertise of that person to prepare an environmental management programme, including a curriculum vitae.

The contact details and expertise of the environmental consultant are provided in Section 2 of this report.

The applicant will be responsible for the implementation of the EMPr. The contact details are provided in Section 2.



8.3 Description of the proposed project

An EMPr must provide -

- (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.*
- (c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.*

A detailed description of the proposed development and aspects covered by the EMPr is provided in Section 3 of this report. Section 5 provides a description of the biophysical environment of the site.

Venter (2017) identified a seep wetland on site and within 500m of the site (Figure 5.15). Approximately 3000m² of the seep wetland (western portion of the site) has been cleared for truck parking and covered with a soil/gravel layer. A portion of the wetland extending onto the adjacent vacant property (south and south west of the site) has also been cleared. The wetland in the eastern portion of the site ($\pm 2000\text{m}^2$) is still intact, but has also been impacted as indicated in Section 5.9.4.2.

The seep wetland (i.e. entire seep both on and off-site) has an overall sensitivity of High (Figure 8.1) and a conservation importance rating of High (Figure 8.1).

The cleared wetland area has an overall sensitivity of Moderate (Table 5.8b; Figure 5.16) and a conservation importance of High (Table 5.8b; Figure 5.17).

According to Sharratt (2017), the hydrology and associated vegetation, as well as soils, have all been largely modified relative to the original state and extent of the seep wetland. Much of the subsurface seepage was converted to surface flows along preferential flow paths and ponding of water occurred within trenches, along pipelines and within disturbed areas. Under natural (unimpacted) conditions, water inputs would have been mainly by subsurface flows (within the soil profile) from upslope areas (to the southwest of the site). The manner in which water flowed through the landscape has thus been changed substantially.



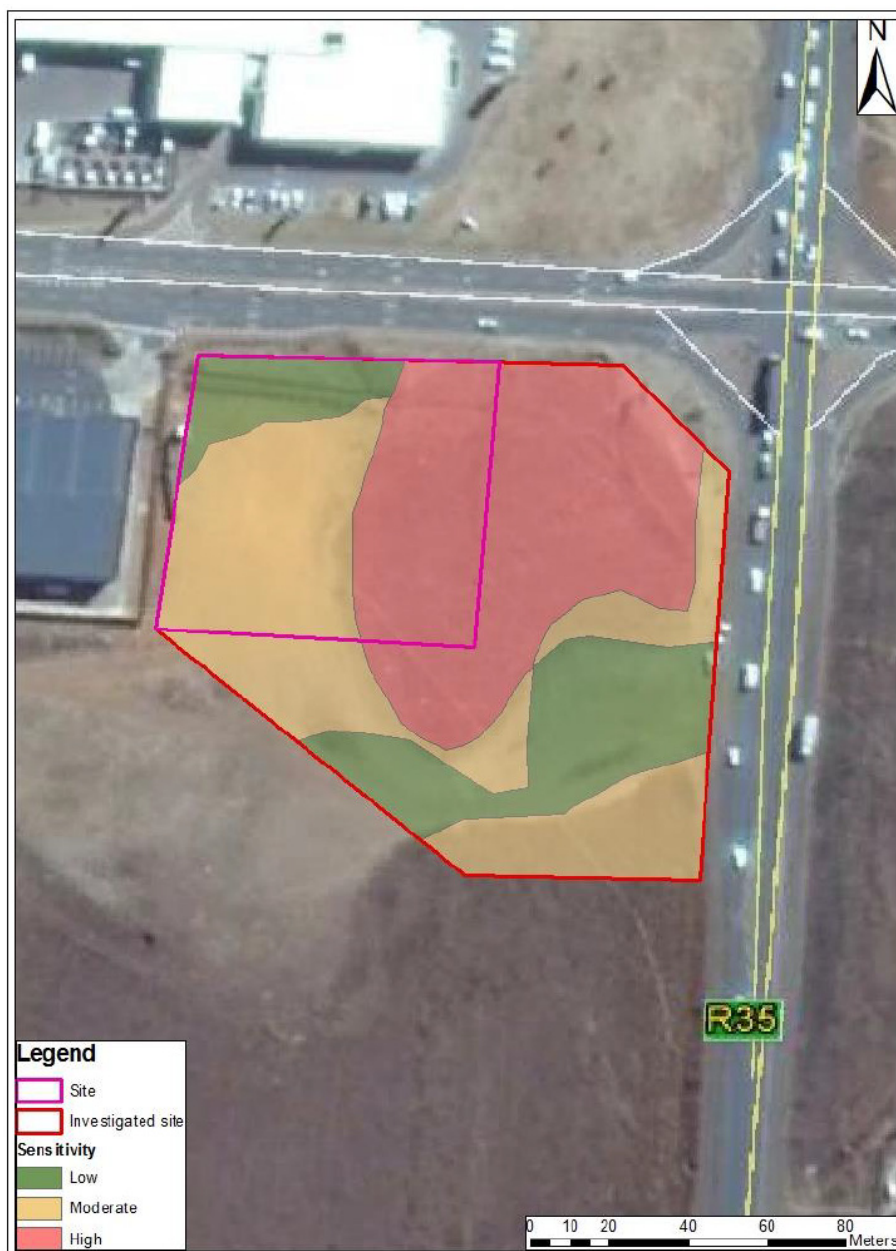


Figure 8.1: Sensitivity of the site (taken from Venter, 2017)

8.4 Phases of the development and timeframe

8.4.1 Planning and design phase and pre-construction activities

The planning and design phase involved mostly office work and site surveys with regards to the design of the layout plan, the Basic Assessment Report and the specialist studies. It also involves obtaining the necessary authorisations for the said development.

No actual work (pre-construction or construction) took place on site. Therefore, no mitigation measures need to be implemented.



8.4.2 Construction phase

The proposed filling station will be located on Portion 1 of Erf 10769, Middelburg X26, which is 5000m² in extent. The development will comprise of the following as indicated in Figure 3.2 (conceptual layout plan):

- Underground tanks/tank farm (93 Unleaded, 95 Unleaded and diesel);
- Pump island (above-ground fuel pumps and hose dispensers);
- Associated pump and tank infrastructure (e.g. delivery pipes, fillers, suction pumps, etc.);
- Canopy covered forecourt with 10 vehicle refuelling bays;
- Convenience store (including fast food outlet) of ±200m²;
- ATM;
- Car parking;
- Delivery parking areas;
- Ablution facilities;
- Two access roads;
- Storm water channel and containment slab with catchpit;
- Generator
- Landscaped area.

As indicated in Section 4.3, Roberts (2017) proposed that the filling station infrastructure (i.e. buildings and canopy) be turned a few degrees eastward in order to improve visibility and allow easy access and turning for the 17 m fuel tankers. A new layout plan (Layout Plan No 3; Figure 4.3) was thus drafted and is the preferred option. **Layout Plan No 2 (Figure 4.2 and Figure 3.2) however, still indicates the conceptual layout of the filling station in terms of location of tank farm, shop, fuel pumps, etc.** Detailed designs will only be available at a later stage once the preferred fuel supplier has been decided upon.

The construction phase would involve the following:

- clearing of vegetation and levelling of the site;
- excavation/earthworks for the underground tank pits, service trenches and building foundations;
- installation of the underground tanks and associated infrastructure;
- installation of the services (i.e. water supply, electrical connections, sewer network, internal roads, storm water pipes);
- laying of the required foundations for buildings;
- building of the outer structures;
- installation of the required internal fittings;
- construction of access roads;
- surfacing/paving of parking area;
- rehabilitation of disturbed areas;
- landscaping.

Proposed access road:

Access to the proposed filling station site will be provided from La Roca Boulevard and Samora Machel Street (R35) as indicated in Figure 5.20.

The construction of the proposed access road would involve the following:

- clearing of vegetation and levelling of the site;
- layering of the road;
- surfacing of the road.



Section 7.7 provides further details with regards to potential impacts identified.

Construction phase:

12-18 months

8.4.3 Operational phase

The operational phase would involve the following:

- The utilization of the filling station and associated infrastructure;
- The utilization of the proposed access road from Samora Machel Street (R35).

Section 7.7 provides further details with regards to potential impacts identified. Mitigation and management measures are indicated in Section 8.5.

Operational timeframe:

Unknown.

8.4.4 Decommissioning and rehabilitation phase

This phase would involve the decommissioning of the buildings and infrastructure already constructed on site at that particular date, if ever required. This phase will not be discussed in detail. It is recommended that at the time of decommissioning, a specific Environmental Management Programme (EMPr) be compiled which specifically addresses this phase. This EMPr would have to address issues such as the removal of the underground tanks, removal of building rubble, ripping of the soil, the sowing of seed and the maintenance of the vegetation until it is established. Soil conservation measures would also have to be implemented.

8.5 Mitigation and management measures to be implemented

An EMPr must include -

(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to -

(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;

(ii) comply with any prescribed environmental management standards or practices;

(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and

(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable.



8.5.1 Construction site office

Impact management outcome:

- 1) *To ensure that an appropriate site is selected for the construction site office and that the site office is managed in an environmentally responsible manner with the least impact on the natural environment, site workers and adjacent landowners/users.*

Mitigation and management measures:

- a. A suitable site must be selected, demarcated and fenced for the construction site office within the demarcated site boundaries.
- b. The construction office may not be located south of the site near the adjacent wetland area.
- c. The construction office may not be located east of the site within the Public Open Space area leased by G. Strydom.
- d. No overnight accommodation may be provided on site.
- e. Chemical toilets must be provided for use by the site workers. These must be serviced on a regular basis. No long drop toilets may be allowed.
- f. Potable water must be made available to site workers.
- g. The waste management measures as indicated in Section 8.5.6 must be implemented.
- h. An area for the parking of construction vehicles and other vehicles should be clearly demarcated. When not in use, all vehicles should be parked within this area. The demarcated parking area should be located within or in close proximity to the construction site office.
- i. As far as practically possible, vehicles must not be serviced/repaired on site. However, should it not be possible to take the vehicle to a service centre in town for repair, the contractor must ensure that the vehicles are serviced/repaired on a cement slab and that drip trays are utilized. Waste oil, filters, etc. must be properly disposed of (see Section 8.5.6).

8.5.2 General construction principles

Impact management outcome:

- 1) *To ensure that the activities that occur during the construction phase have the least impact on the natural and social environment, site workers and adjacent landowners/users.*

Mitigation and management measures:

- a. All relevant authorisations must be obtained before construction commences.
- b. Layout Plan No 3 (Figure 4.3) to be implemented with regards to the position of the filling station and access roads.
- c. The applicant/contractor must appoint a Safety Officer and Environmental Control Officer (ECO) in order to ensure compliance with the legislation.
- d. All construction activities must be limited to the said site. The said

8.5.2 General construction principles

- site should be properly demarcated (fenced) and the footprint kept as small as possible.
- e. No activities to be located south of the site near the wetland area.
 - f. No activities to be located east of the site within the Public Open Space area leased by G. Strydom.
 - g. The proposed access road with road reserve to be demarcated and all activities to take place within the demarcated area.
 - h. The bulk water pipeline located on the eastern boundary of the site must be identified and demarcated before any construction takes place.
 - i. Only one access point should be provided from La Roca Boulevard during the construction phase. No access from Samora Machel Street (R35) to be provided. The access point should be controlled to minimize the impact on traffic utilizing La Roca Boulevard and Samora Machel Street (R35).
 - j. Before construction, the applicant must ensure that all possible services located within the site boundaries (e.g. telephone lines, electrical lines, sewer lines, etc.) are located and demarcated.
 - k. The underground tanks and related infrastructure to be installed in accordance with the various Health, Safety and Environmental policies and Standard Specifications of the appointed oil company (also see Section 8.5.8).
 - l. No members of the general public should be allowed at the construction site.
 - m. Any significant changes to the layout plan would necessitate approval from the Department of Agriculture, Rural Development, Land and Environmental Affairs before commencing with construction.
 - n. All equipment to be installed using approved contractors.
 - o. No unnecessary removal of vegetation should take place.
 - p. An area must be selected (within the said site) and demarcated for the stockpiling of spoil (e.g. rocks, soil, etc.) until rehabilitation, or until the spoil is disposed of.
 - q. Should any animals (e.g. reptiles or small mammals) be found during the construction phase, a specialist should be contacted immediately to ensure the safe removal of the specimen(s).
 - r. Contractors to be informed to keep to low speeds on site (especially once the site has been cleared) to reduce the amount of dust.
 - s. Dust suppression measures must be implemented during dry and windy periods.
 - t. Construction activities to be restricted to daylight hours (7am - 6pm) and weekdays (Monday to Friday).
 - u. Sufficient fire extinguishers must be provided as required by legislation.
 - v. All machinery used during the construction phase must be properly muffled and maintained so as to reduce noise generation to a minimum.
 - w. All pollution incidents must be reported to the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation within 24 hours of



8.5.2 General construction principles

occurrence.

- x. If any archaeological remains are exposed during the construction phase, the construction must be terminated immediately and the Provincial Heritage Resources Authority (SAHRA) must be notified in this regard. The applicant must take note of the requirements in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).
- y. If any graves are discovered during construction, the discovery must be reported to the SA Police Service and/or SAHRA or an archaeologist must be called in to handle the matter.
- z. If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist must be called to determine proper mitigation measures.

8.5.3 Rehabilitation of the environment after construction

Impact management outcome:

- 1) *To ensure that the disturbed area due to construction activities is properly rehabilitated and maintained.*
- 2) *To control the growth of declared weeds and/or invader plants.*
- 3) *To ensure that any declared weeds and/or invader plants do not establish on site and spread to the adjacent seep wetland/grassland area (located to the south of the site).*

Mitigation and management measures:

- a. Before construction, topsoil must be removed and stockpiled in a demarcated area within the site for rehabilitation of the area surrounding the buildings. The topsoil layer generally has a high organic content and carries the seed bank. It is invaluable for post-development rehabilitation.
- b. Once construction has been completed, all temporary structures, excess materials, equipment and waste must be removed from site.
- c. The disturbed areas must be top soiled and re-vegetated (i.e. rehabilitated) as soon as possible in order to prevent soil erosion and the establishment of alien vegetation.
- d. All residual stockpiles must be removed to spoil or spread on site as directed by the ECO.
- e. Proper stormwater control measures and erosion control must be implemented to prevent erosion of the newly rehabilitated areas during heavy rainfall.
- f. Temporary erosion control measures (e.g. geo-textile silt fences, diversion ditches, sediment traps) and temporary seeding with fast growing annuals to be kept in place to control erosion until the long-term erosion control methods are established and functioning.
- g. If soil erosion is noted, appropriate remediation measures must be implemented.
- h. For rehabilitation purposes, a seed mix comprising of grass species



8.5.3 Rehabilitation of the environment after construction

- indigenous to the area should be used. The planting of any alien plant species (e.g. Kikuyu) as part of landscaping should be prohibited.
- i. The regulations in terms of Alien Invasive Species, the Conservation of Agricultural Resources Act, 1983 and the Mpumalanga Nature Conservation Act, 1998 (Act 10 of 1998) with regards to declared alien species must be noted and complied with.
 - j. An alien and invasive species control and monitoring plan as required in terms of the Alien and Invasive Species Regulations under the National Environmental Management Biodiversity Act (Act 10 of 2004) should be compiled and implemented.
 - k. Regular site inspections to be conducted to identify any declared weeds and/or invader plants. If identified, the plants to be eradicated using appropriate methods.
 - l. It is advisable to consult the latest edition of 'A guide to the use of herbicides' or contact the National Department of Agriculture, Forestry and Fisheries with regards to the latest information pertaining to the application of herbicides. If pesticides or herbicides are to be used, the product should be chosen responsibly. Storage, administering and disposal must be done according to the prescribed methods.
 - m. A post-construction audit must be conducted to ensure that any shortcomings are identified and addressed.

8.5.4 General operational principles

Impact management outcome:

- 1) *To ensure that the activities that occur during the operational phase have the least impact on the natural environment, site workers and adjacent landowners/users.*

Mitigation and management measures:

- a. All operational activities must be limited to the said site (e.g. no parking areas to be allowed on the vacant property south of the site or the public open space east of the site).
- b. The following **energy saving** initiatives must be implemented in order to reduce the carbon footprint of the development.
 - *Energy efficient lighting (e.g. LED lighting) to be installed where possible;*
 - *Designing the buildings in such a way as to maximize the use of daylight (e.g. skylights, large windows, etc.);*
 - *Solar geysers to be installed where feasible;*
 - *Gas stoves to be used by convenience store where feasible.*
- c. The following measures to minimize **water use** during the operational phase must be implemented:
 - *Regular maintenance of the water infrastructure to minimize water wastage;*
 - *High pressure washers to be used during cleaning to minimise*



8.5.4 General operational principles

- water use;*
- *Harvested stormwater to be used for irrigation of gardens if possible;*
 - *Water usage to be monitored;*
 - *Waterwise signage to be displayed in the public restrooms;*
 - *Waterwise taps (e.g. taps with infra-red sensors/low-flow taps) to be installed in the public restrooms.*
- d. The waste management measures provided in Section 8.5.6 of this report to be implemented.

8.5.5 Soil management

Impact management outcome:

- 1) *To ensure that the activities that occur during the construction phase have the least impact on the soils in terms of soil quality, structure and erosion potential.*
- 2) *To reduce the potential impact of storm water drainage from the site on the surrounding properties and roads in terms of soil erosion during the construction and operational phases.*

Mitigation and management measures:

- a. Topsoil must be removed and stockpiled in a demarcated area for rehabilitation or landscaping purposes once construction has been completed. The topsoil layer generally has a high organic content and carries the seed bank. It is invaluable for post-development rehabilitation.
- b. Topsoil stockpiles must be located on a flat area and must not be higher than 2 m.
- c. An area must be selected (within the 5000m² site) and demarcated for the stockpiling of spoil (e.g. rocks, soil, etc.).
- d. Any stockpile, which is likely to remain for 12 months or more, must be vegetated.
- e. All residual stockpiles must be removed to spoil or spread on site as directed by the ECO.
- f. Appropriate soil conservation and storm water management measures to be provided in order to prevent soil erosion.
- g. The water management measures as indicated in Section 8.5.7 must be implemented during both the construction and operational phases.
- h. Monitor for erosion and intervene and/or rehabilitate where necessary.

Impact management outcome:

- 3) *To reduce potential soil pollution as a result of construction and operational activities.*



8.5.5 Soil management

Mitigation and management measures:

- a. The waste management measures as indicated in Section 8.5.6 must be implemented during both the construction and operational phases.
- b. The water management measures as indicated in Section 8.5.7 must be implemented during both the construction and operational phases.
- c. Regular maintenance of the sewage infrastructure to reduce the potential for blockages and leaks and thus prevent potential soil pollution.
- d. If any soil or surface water contamination is noted, appropriate remediation measures must be implemented immediately. An environmental incident report must be completed indicating the date of the incident, description of incident and action taken. The Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation must be informed of the event within 24 hours. A copy of the environmental incident report must be kept on file at the site office.

Impact management outcome:

- 4) *To ensure that the geotechnical recommendations are taken into account during the construction phase in order to prevent impact on structures during the operational phase.*

Mitigation and management measures:

- a. As indicated in Figure 5.9b (TP51), the entire site (including the proposed access road from Samora Machel Street (R35)) is underlain by medium to highly active clays (up to 2m thick and more) derived from in-situ decomposed diabase and Loskop shale.
- b. According to Hansmeyer (2004), the following construction methods would apply where medium to highly active clays are present on site:
 - o removal of the active clay layer and construction of a soil raft.
 - o piled foundations or;
 - o a cut to fill operation.
- c. The western and central portions of the site also comprise collapsible soils (Figure 5.9b). According to Hansmeyer (2004), the following construction methods would apply where collapsible soils are present on site:
 - o deep strip foundations or;
 - o compaction of in-situ soils below individual footings and floors.
 - o piles, or mini-piles.
- d. The proposed filling station site is not susceptible to a perched water table. However, a portion of the proposed access road from Samora Machel Street (R35) may extend over an area susceptible to a perched water table (Figure 5.9b). Hansmeyer (2004) indicated that subsurface drains may be required to accommodate a possible rebound in the perched water table.



8.5.6 Waste management

Impact management outcome:

- 1) *To ensure the proper storage, management and disposal of waste during the construction phase.*
- 2) *To reduce potential soil, surface water and groundwater pollution as a result of waste management activities during construction phase.*

Mitigation and management measures:

General/building waste

- a. Proper waste management measures must be implemented at the site.
- b. No waste may be burnt, buried or dumped on site or the surrounding area.
- c. Waste skips to be provided for placement of general waste, building rubble, etc.
- d. Promote source separation through the provision of waste bins clearly marked for recycling and general waste. These bins should be emptied on a regular basis and disposed of accordingly (i.e. sent for recycling, taken to the licensed Rietfontein Waste Disposal Site, etc.).
- e. The applicant will have to ensure that the contractor removes the building rubble and any domestic waste to the licensed Rietfontein Waste Disposal Site.
- f. Waste and building rubble not to be placed on the soil stockpiles resulting in the contamination of the soil.
- g. Building rubble must be disposed of at a site specifically earmarked for that purpose. No building rubble to be disposed of in a haphazard way in the area surrounding the development site.
- h. During the construction phase, cement/concrete should be mixed in either demarcated areas or on metal sheeting or conveyor belts. If mixed in demarcated areas, these areas will have to be ripped and the cement/concrete removed on completion of construction activities.
- i. Site workers must be instructed to collect windblown rubbish which may collect in the surrounding area on the said site. This will assist with the overall visual appearance of the site.
- j. The applicant/contractor must ensure that all site workers receive appropriate training with regards to the overall waste management measures to be implemented for the said site.
- k. Site workers must be aware of the importance of the implementation of the waste management measures.
- l. Continually reduce resource waste by applying the waste hierarchy (i.e. waste avoidance, reduction, reuse, recycling and disposal).

Hazardous waste management

- m. Proper bunded storage facilities must be provided for the storage of oils, grease, fuels, etc. to be used during the construction phase.
- n. Wash-down water from equipment not to enter the municipal storm



8.5.6 Waste management

water infrastructure.

- o. Collection containers (e.g. drip trays) must be placed under all dispensing mechanisms for hydrocarbons or hazardous liquid substances to ensure that potential contamination from leaks/spillage is reduced.
- p. No hazardous substance is to be disposed of on site.
- q. No bins containing organic solvents, paint tins or bins containing thinning agents may be cleaned on site, unless containers for liquid disposal are provided. The tins must be collected and rinsed at a central waste collection point, where it poses no threat to surface or ground water.
- r. All spills of chemicals or hydrocarbons (oil, grease, diesel, petrol, etc.) should be cleaned with the use of suitable absorbent materials such as drizit or oclanzorb. Appropriate soil remediation measures should be implemented where soil has been contaminated with oil.
- s. Contaminated soil generated as a result of fuel, oil, etc. spills will be disposed of in a specially marked drum located at the site office. An approved waste contracting firm (e.g. Enviroserv) will collect the drum and dispose of the contaminated soil at an appropriate waste disposal site.
- t. Contaminated soil/fuel that cannot be removed will be treated in situ with an appropriate remedial agent. In this instance, the services of an expert may be required.
- u. Waste oils collected on site should be stored in drums in a designated, bunded area and removed by an approved recycling contractor and disposed of at an appropriate licensed waste disposal facility.
- v. In all instances where a firm is contracted to collect waste (e.g. Enviroserv, Wastetech, Oilkol, etc.), the site operator will ensure that the correct documentation is completed and filed for future reference.
- w. Certificates of hazardous waste disposal (waybills) are to be kept for auditing purposes.
- x. Records of environmental related incidents should be maintained.
- y. The applicant must ensure that all workers receive relevant training with regards to the handling of hazardous substances and the potential health risks thereof.
- z. The contractor and/or applicant will be responsible for establishing an emergency procedure for dealing with spills.

Impact management outcome:

- 3) *To reduce potential soil, surface water and groundwater pollution as a result of waste management activities during the operational phase.*

Mitigation and management measures:

- a. The waste collection area must be kept clean and tidy at all times. This area will not be littered with waste lying outside of the waste



8.5.6 Waste management

- bins/skips.
- b. Rubbish bins for domestic waste will be provided in the forecourt area for use by the general public. These rubbish bins will be emptied as soon as full and the contents disposed in metal cages/skips/bins located in the yard behind the convenience store.
 - c. Domestic waste generated by the convenience store and the forecourt area will be sorted and stored in metal cages/skips/bins until collected and disposed at the registered Rietfontein Waste Disposal Site.
 - d. The Steve Tshwete Local Municipality will collect the waste on a weekly basis and dispose thereof at the registered Rietfontein Waste Disposal Site.
 - e. Where possible, recycling of waste will be encouraged and appropriate bins provided for the recycling initiative.
 - f. Hazardous waste will be separated from general waste, stored separately in appropriate containers and disposed of at a licensed hazardous waste disposal facility or certified recycling facility. No hazardous substance will be disposed of on site.
 - g. Site workers will be instructed to collect windblown rubbish which may collect within the surrounding landscaped, paved or undeveloped area on the said site. This will assist with the overall visual appearance of the site.
 - h. The site operator will ensure that all site workers receive appropriate training with regards to the overall waste management measures to be implemented for the said site.
 - i. Site workers must be aware of the importance of the implementation of the waste management measures.

Impact management outcome:

- 4) *To ensure the proper storage and management of hazardous substances and materials (e.g. fuel, motor oil, cooking oil, grease, disinfectants) on site and reduce the potential impact on site workers and interested and affected parties.*
- 5) *To ensure the proper disposal of hazardous wastes generated on site and reduce the potential impact on site workers and interested and affected parties.*

Mitigation and management measures:

- a. A register of all hazardous substances stored on site must be kept. Relevant Material Safety Data Sheets (MSDS) must be available on site for all potentially hazardous substances (as defined in the regulations for Hazardous Chemical Substances). In the event of an emergency, procedures detailed in the MSDS must be followed.
- b. Proper storage facilities must be provided for the storage of oils, grease, fuels, chemicals and any hazardous materials.
- c. Major stocks of hazardous substances (other than fuel) should preferably be stored off-site.
- d. Hazardous waste must be separated from general waste, stored separately in appropriate containers and disposed of at a licensed hazardous waste disposal facility or certified recycling facility.
- e. No hazardous substance is to be disposed on site.

8.5.6 Waste management

- f. A grease trap must be provided in the kitchen of the convenience store. This grease trap must be cleaned every second week. The generated waste (oil, grease, etc.) must be disposed of in a specially marked drum located in the yard behind the convenience store. On a regular basis, an approved waste contracting firm (e.g. Enviroserv) must collect the drum and dispose of the waste at an appropriate waste disposal site. Records of this maintenance activity and removal of waste must be kept.
- g. Contaminated sand generated as a result of fuel, oil, etc. spills must be disposed of in a specially marked drum located in the yard behind the convenience store. On a regular basis, an approved waste contracting firm (e.g. Enviroserv) must collect the drum and dispose of the contaminated sand at an appropriate waste disposal site.
- h. Contaminated soil/fuel that cannot be removed must be treated in situ with an appropriate remedial agent. In this instance, the services of an expert may be required.
- i. Any material soaked with fuel or oil must be placed in a drum and arrangements made for its safe disposal at an appropriate waste disposal site by an approved waste contracting firm (e.g. Enviroserv).
- j. In all instances where a firm is contracted to collect waste (e.g. Enviroserv), the site operator must ensure that the correct documentation is completed and filed for future reference.
- k. Certificates of hazardous waste disposal (waybills) are to be kept for auditing purposes.
- l. All pollution incidents must be reported to the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation within 24 hours of occurrence. Records of environmental related incidents should be maintained.
- m. All spills greater than 200 litres must be reported to the Department of Water and Sanitation, the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Steve Tshwete Local Municipality.
- n. An emergency plan for the handling of major/minor spills at the facility and during transportation of product must be compiled and a copy kept on site. Staff must be appropriately trained to implement the plan.
- o. The site operator must ensure that all site workers receive relevant training with regards to the handling of hazardous substances.
- p. Site workers must be made aware of the health risks associated with hazardous substances.



8.5.7 Water management

Impact management outcome:

- 1. To reduce the potential impact of storm water drainage from the site on the surrounding area (including the adjacent seepage wetland) in terms of flooding and soil erosion during the construction phase.*

Mitigation and management measures:

- If possible, construction should take place during the dry season to prevent soil erosion.
- Appropriate soil conservation and storm water management measures to be provided in order to prevent soil erosion and loss of topsoil.
- Increased run-off during construction must be managed using berms and other suitable structures to ensure flow velocities are reduced.

Impact management outcome:

- 2. To reduce the potential impact of storm water drainage from the site on the surrounding area (including the adjacent seepage wetland) in terms of water flow, flooding and soil erosion during the operational phase.*
- 3. To reduce the potential impact of ponding on the underground tanks during the operational phase.*

Mitigation and management measures:

- A detailed storm water management plan to be drafted for the site and proposed access road.
- The storm water from the adjacent Retail City must be accommodated within the storm water management system of the filling station, or diverted into the municipal storm water system, to reduce the potential for ponding and erosion on site.
- The road pavement and forecourt area to be paved and sloped as per an approved storm water management plan.
- Permeable surfaces should be used as far as possible and the total sealing of the surface must be avoided (Venter, 2017).
- Ensure that water will still reach the remaining wetland portion east of the site through the installation of sub-surface drainage under buildings (where appropriate) or overland via the storm water system (Venter, 2017).
- Storm water may not enter the wetland directly, but must be attenuated before exiting the storm water system (Venter, 2017).
- Storm water may not be concentrated into the wetland area, but must be spread over a wide area (Venter, 2017).
- No ponding of water to occur on site, which could impact on the underground fuel storage tanks and therefore the groundwater of the site.
- The storm water management measures must be inspected on a



8.5.7 Water management

regular basis in order to ensure that the structures are functional (not blocked) and not resulting in ponding. This will be of particular importance at the start of the rainy season and during the rainy season.

- j. The following additional measures should be implemented: debris and rubbish to be removed from kerb inlets and conduits during routine inspections; sediment to be removed especially after the first couple of months of installation as un-surfaced areas contribute a lot of sand/debris; debris, silt, etc. to be disposed of at an approved landfill site (if contaminated); stone pitching or gabion work to be repaired after major flooding; check on structural integrity of kerb inlets; damaged kerb inlets could lead to uncontrolled erosion downstream.

Impact management outcome:

- 4) *To ensure that the construction and operational phases do not impact on the surface water run-off quality.*
- 5) *To prevent the contamination of clean storm water runoff, the surrounding surface water run-off, the surrounding soil and the nearby seep wetland.*

Mitigation and management measures:

- a. A detailed storm water management plan to be drafted and implemented for the site and proposed access road.
- b. The waste management measures as indicated in Section 8.5.6 must be implemented during both the construction and operational phases.
- c. Regular maintenance of the sewage infrastructure to reduce the potential for blockages and leaks and thus prevent potential water pollution.
- d. The forecourt to be located on top of a concrete containment slab.
- e. Rain that falls onto the canopy (roof) of the filling station to be treated as clean water and routed separately to the overall storm water management system.
- f. The overall storm water management system would comprise of catchpits and concrete storm water pipes (with a recurrence interval of 5 years) that would connect to the existing 600mm diameter municipal storm water pipe present in the north-eastern corner of the site (Strydom, 2017).
- g. Areas where spillages may occur must be sealed to prevent the ingress of water into the soil.
- h. A storm water channel with catchpit to be installed along the southern boundary of the forecourt to capture any polluted runoff water.
- i. A 5 m x 10 m containment slab (with catchpit) to be provided at the remote diesel island.
- j. The catchpits to be checked and emptied on a weekly basis and kept clean to prevent blockages and overflow. The collected material to be disposed of at a suitable waste disposal facility (hazardous waste site) by a company such as e.g. Enviroserv.



8.5.7 Water management

- k. Records of water quality analysis and quantities of materials removed from the catchpit to be kept on file at the site office.
- l. The Fuel Supplier must ensure that sufficient training is provided to the operators of the refuelling area. Training must include general site operation, spill response and emergency procedures.
- m. An emergency plan for the handling of minor/major spills must be compiled and a copy kept on site. Staff must be appropriately trained to implement the plan.
- n. A spill kit must be available on site and the staff trained in the utilization thereof.
- o. In the unlikely event of a major spillage or leakage, an appropriate spill response and clean-up contractor must be contacted immediately to assist in clean-up operations.
- p. All spills greater than 200 litres must be reported to the Department of Water and Sanitation, Department of Agriculture, Rural Development, Land and Environmental Affairs and the Steve Tshwete Local Municipality.
- q. If any soil or surface water contamination is noted, appropriate remediation measures must be implemented immediately. An environmental incident report must be completed indicating the date of the incident, description of incident and action taken. The Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation must be informed of the event within 24 hours. A copy of the environmental incident report must be kept on file at the site office.

8.5.8 Groundwater management measures

Impact management outcome:

- 1) *To reduce the potential impact on the groundwater of the site and immediate surrounding area (especially the seep wetland) as a result of the installation and utilization of the underground fuel storage tanks.*

Mitigation and management measures:

- a. The storm water management measures as indicated in Section 8.5.7 to be implemented.
- b. The underground tanks and related infrastructure to be installed in accordance with the various Health, Safety and Environmental policies and Standard Specifications of the appointed oil company. In addition, all work at the filling station to be done in accordance to the following SANS standards:
 - *SANS 10089 Part 3 (2010): The Petroleum Industry Part 3: The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.*
 - *SANS 10089 Part 2 (2007): The petroleum industry Part 2: Electrical and other installations in the distribution and marketing sector.*
 - *SANS 1535 (2007): Glass-reinforced polyester-coated*



8.5.8 Groundwater management measures

steel tanks for the underground storage of hydrocarbons and oxygenated solvents and intended for burial horizontally.

- c. All equipment must be installed using approved contractors.
- d. For the underground tank, the sides of the pit must be cut vertically and the bottom horizontally. Care must be taken to ensure dimensions are not decreased during excavation. Overall dimensions are to be checked before lowering the tank. Jamming the tank in the excavation can be extremely costly to rectify.
- e. The relatively shallow depth to groundwater (4.82 to 7.70 mbgl) should be taken into account by the engineer when designing the underground tank area.
- f. The tank must be thoroughly inspected before installation for apparent fracture and damage and to ensure that the protective coating is intact.
- g. The necessary mitigatory measures and early warning systems (e.g. automatic tank gauging and leak detectors) must be put in place to minimise any potential impact on the environment as a result of possible product leakages and/or spillages (Van der Walt, 2017).
- h. Filler points and tank manholes must be fitted with secondary containment measures to ensure that any tank overfills are contained.
- i. In addition, concrete containment slabs must be constructed around filler points and the dispensing area.
- j. Daily stock reconciliation to be done and record kept thereof (Van der Walt, 2017).
- k. The leak detectors to be tested regularly and records kept.
- l. If product loss is suspected, the relevant Oil Company/fuel supplier to be contacted to isolate and rectify the problem. An environmental incident report to be completed and kept on file at the site office.
- m. In the case of fuel spillage/leakage, an independent geohydrologist must be commissioned to determine the lateral and vertical extent of the contamination plume as well as to provide recommendations to assist with remediation and rehabilitation of the affected area.
- n. Should contamination be detected, the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation to be informed and a rehabilitation plan to be compiled and executed.
- o. Records of monitoring to be kept and made available to the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation.



8.5.9 Interested and affected parties

Impact management outcome:

- 1) *To ensure that site workers and the general public are not impacted upon in terms of the construction work being performed.*
- 2) *To reduce the potential visual impact as a result of the presence of the filling station on interested and affected parties.*

Mitigation and management measures:

- a. The applicant/contractors must ensure that the necessary protective gear (PPE) is worn at all times and that signs are erected to warn workers to use hearing protection as well as any other hazards.
- b. The applicant/contractor must adhere (at all times) to the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), the Construction Regulations, 2003 and any other applicable legislation.
- c. For safety purposes, excavations must not be undertaken until such time as all required materials are available and services can be laid.
- d. Excavations should be closed as soon as is practically possible.
- e. If blasting is required, the requirements of the Explosives Act, 2003 (Act 15 of 2003) must be put in place in order to prevent any impact on site workers, etc.
- f. The waste management measures as indicated in Section 8.5.6 must be implemented during the construction and operational phase in order to keep the site neat and tidy at all times.
- g. All machinery used on site must be properly muffled and maintained so as to reduce noise generation to a minimum.
- h. Construction activities must be limited to daylight hours (7am - 6pm) and weekdays (Monday to Friday) in order to minimize the impact on nearby businesses.
- i. The adjacent landowners/users must be provided with contact numbers with whom complaints or concerns can be discussed.
- j. All construction and operational management principles as indicated in this EMPr must be implemented.

Impact management outcome:

- 3) *To ensure that general road users utilizing La Roca Boulevard are not impacted as a result of the construction and operation of the filling station and proposed roundabout.*

Mitigation and management measures:

- a. The general construction principles indicated in Section 6.5.2 to be implemented.
- b. Permission to be obtained from the Steve Tshwete Local Municipality for the construction of the roundabout in La Roca Boulevard.
- c. The roundabout in La Roca Boulevard to be constructed as per Layout Plan No 3 (Figure 4.3).



8.5.9 Interested and affected parties

- d. Proper signage, warning signals, etc. (i.e. required safety measures) must be provided to warn road users that the proposed roundabout is being constructed. These signs must be visible at night.
- e. Only the approved access point from La Roca Boulevard to be used by customers and delivery vehicles.
- f. Care should be taken pertaining to the placing of signage in close proximity to the access point to ensure that road visibility is not affected;
- g. The site operator must ensure that the filling station does not become a drop off and pick up point for the local taxi operators resulting in traffic congestion.

Impact management outcome:

- 4) *To ensure that general road users utilizing Samora Machel Street (R35) are not impacted as a result of the construction and operation of the filling station and proposed access road.*

Mitigation and management measures:

- h. The general construction principles indicated in Section 6.5.2 to be implemented.
- i. Permission to be obtained from the South African National Roads Agency for the proposed left-in left-out access from Samora Machel Street (R35) instead of the previously approved left-in-only access.
- j. Permission to be obtained from the Steve Tshwete Local Municipality for the construction of the proposed access road across the Remainder of Portion 27 of the farm Middelburg Town and Townlands 287 JS.
- k. A barrier median to be constructed in Samora Machel Street (R35) to prevent right-in and right-out unsafe movements.
- l. Proper signage, warning signals, etc. (i.e. required safety measures) must be provided to warn road users that the proposed access road is being constructed. These signs must be visible at night.
- m. Only the approved access road from Samora Machel Street (R35) to be used by customers and delivery vehicles.
- n. Care should be taken pertaining to the placing of signage in close proximity to the access point to ensure that road visibility is not affected;
- o. The site operator must ensure that the filling station does not become a drop off and pick up point for the local taxi operators resulting in traffic congestion.
- p. The site operator must ensure that the access road from Samora Machel Street (R35) is not used as a shortcut to Middelburg Mall.

Impact management outcome:

- 5) *To ensure good relations with all interested and affected parties by creating open channels of communication to address matters of concern that may arise.*

8.5.9 Interested and affected parties

Mitigation and management measures:

- a. Communication between the site operator and the various interested and affected parties will be established and maintained.
- b. In order to provide feedback with regards to complaints/concerns received, a complaints register will be kept at the site office.
- c. The complaints register will record the following: Date when complaint/concern was received; Name of person to whom the complaint/concern was reported; Nature of the complaint/concern reported; the way in which the complaint/concern was addressed (date to be included).
- d. Any complaints regarding the said filling station will be brought to the attention of the Department of Agriculture, Rural Development, Land and Environmental Affairs within 24 hours after receiving the complaint.
- e. The complaints register will be kept up to date for inspection by members of the Department of Agriculture, Rural Development, Land and Environmental Affairs.

Impact management outcome:

- 6) *To ensure that fugitive emissions do not impact on site workers and interested and affected parties.*

Mitigation and management measures:

- a. Vent pipes should be positioned at a point remote from all buildings and neighbouring property boundaries to mitigate the impact of vent gasses from vent pipes and the interceptor chamber.
- b. All sample points must be enclosed and routed to drip tanks thus eliminating vapour within the facility.
- c. When required, double mechanical seals must be used.
- d. Operation and maintenance procedures must be compiled and implemented. Site workers must be aware of the said operation and maintenance procedures.

Impact management outcome:

- 7) *To minimize the potential for fire-related accidents and explosions at the filling station and in this way to protect site workers and interested and affected parties.*

Mitigation and management measures:

- a. Smoking must be prohibited on the said site. No smoking signs must be prominently displayed.
- b. Safety signage must be put in place. These include, "no naked flames; no smoking; no cellular phones".
- c. Sufficient fire extinguishers must be provided as required by legislation. The site operator must ensure that the said fire extinguishers are serviced on a regular basis and are operational.
- d. The closest fire hydrant must be clearly marked and indicated to all site workers. The site operator must ensure that the fire hydrant is checked on a regular basis to ensure that it is operational.

8.5.9 Interested and affected parties

- e. An emergency response plan for firefighting must be compiled and all site workers must receive training.
- f. An emergency assembly point should be identified on or near the site and clearly marked.
- g. The site operator must ensure that all site workers are trained in the use of the appropriate firefighting equipment.
- h. The site operator should liaise with the emergency services of the Steve Tshwete Local Municipality to ensure that they are aware of where the site is, the layout of the site as well as where the on-site firefighting equipment is located.
- i. The contact number of the emergency services of the Steve Tshwete Local Municipality must be prominently displayed on site.
- j. The Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation must be informed within 24 hours of the occurrence of such an event.

8.6. Contingency plan w.r.t. fuel spillages

8.6.1 Equipment required

The following equipment must be kept on-site in order to deal with fuel spillages:

- Absorbing fibres;
- Sandbags;
- Sand to absorb spills;
- Two waste bins: one for storage of used fibres and the other for discarding used fibres.

A sufficient quantity of the above-mentioned must be kept on-site at all times.

This equipment must be kept:

- In places where spills are likely to occur i.e. near the pumps and delivery area;
- Located in a clean, dry and easily accessible storage facility.

8.6.2 Classification of spills

8.6.2.1 Minor spills

Minor spill

A minor spill is one that is less than 200 litres and does not threaten any streams, rivers or storm water drains or the public.

The following procedure must be followed when a minor spill occurs:

- Ensure that the bulk serviceman stops the delivery immediately by operating the emergency cut-off device.
- Check the immediate environment to ensure that there is no source of ignition.



- Contain the spillage by using sand from the fire buckets or soak up the spill with unused fibres. (Note: If sand was used and the incident has been dealt with, then arrange for the sand to be disposed of by a specialist contractor. Remember that the sand is still hazardous, as it is highly flammable.)
- If the spill soaked into the ground, then the soil should be ploughed to allow for aeration. Water can then be used to bring oil to the surface and mopped up immediately with the absorbent fibre.
- If absorbent fibres were used, then discard the fibres in the bin for used fibres. Waste fibre must be removed by a specialist contractor.
- If there is product on the vehicle, then wash and wipe the vehicle prior to the vehicle departing from the site.
- Complete an Incident Report.
- Investigate the cause of the spill and take the necessary actions to prevent a re-occurrence.

8.6.2.2 Major spill

Major spill

A major spill is one where more than 200 litres of fuel or oil products is involved. However, a spill of less than 200 litres that threatens any streams, rivers or storm water drains or even incidents that may attract the public, press or authorities attention must be considered a major spill and dealt with in the same manner.

The following procedure must be followed when a major spill occurs:

- Ensure that the bulk serviceman stops the delivery immediately by operating the emergency cut-off device.
- Check the immediate environment to ensure that there is no source of ignition and switch off the site's master switch.
- Close the filling station and warn any people in close proximity of the site to move away.
- Contact the nearest fire station.
- Do not start any vehicle parked near the filling station.
- Try and contain the spillage with sand or soil or try to prevent the product from leaving the filling station's premises and ensure that the fire extinguisher is easily accessible. Note: If a major spill occurs on paving or on non porous surfaces, then form a barrier using sand or sandbags to prevent the spill from entering any drains or from contaminating the natural water system.
- If a major spill occurs on soil or porous surfaces, then remove the contaminated soil for disposal or rehabilitation to prevent the spill from contaminating the groundwater.
- Remove as much of the spill as possible and then mop up using the absorbing fibres. Note: Watering the soil will bring the oil to the surface and make it easier to mop up the product with the absorbing materials.
- Complete an Incident Report.
- Investigate the cause of the spill and take the necessary actions to prevent a re-occurrence.



8.6.3 Mitigation measures to follow when an overspill occurs

The following procedure must be followed when an overspill occurs:

- Stop the delivery of the wet stock products by closing the vehicle faucet and foot valve. Note: The driver cannot disconnect the delivery hose until arrangements can be made to dispense the fuel in the delivery hose, i.e. until the preset quantity of product has been offloaded completely.
- Having emptied the hose, ensure the bulk serviceman disconnects the hose, replaces the filler cap and locks it.
- Amend the Delivery Note to reflect the additional products delivered and confirm the change by authorising the document.
- Ensure the bulk serviceman cleans up any spills before leaving the site.
- Complete an Incident Report.
- Investigate the cause of the spill and take the necessary actions to prevent a re-occurrence.

8.6.4 Mitigation measures to deal with contaminations

A contamination can occur:

- When two different products are mixed together,
- When excessive volumes of water are mixed with the product, or
- As a result of dirt.

The following procedure would have to be followed:

- Draw a sample of at least 500ml and place it in a clean glass container in the presence of a reliable witness. Note: Retain the sample in the event that it is required.
- Label the sample to reflect the tank number, or pump number, product, suspected contamination and date of the sample.
- Contact the supplier for further information regarding product testing.
- Investigate the cause of the contamination and take the necessary actions to prevent a re-occurrence.

8.7 Decommissioning phase

This phase would involve the decommissioning of the facilities already constructed on site at that particular date, if ever required. This would depend on whether the entire project would be decommissioned or only parts thereof.

As previously indicated, it is recommended that at the time of decommissioning, a specific Environmental Management Plan (EMP) be compiled which specifically addresses this phase. This EMP would have to address issues such as the removal of the underground tanks, removal of building rubble, ripping of the soil, the sowing of seed and the maintenance of the vegetation until it is established. Soil conservation measures would also have to be implemented.



However, the following would have to form part of the measures to be implemented with regards to the removal/replacement of the underground tanks:

- Surrounding land owners/users (e.g. nearby businesses, Steve Tshwete Local Municipality, etc.) must be informed of the proposed decommissioning activities.
- All decommissioning activities must be restricted to the said site.
- Access to the site must be restricted to one point and must be controlled in order to avoid the disruption of traffic and impact on interested and affected parties.
- The decommissioning activities should be phased in order to avoid the construction of temporary ablution and toilet facilities. The maintenance of the sewer connection should be ensured for the duration of the activities.
- Strict waste management measures (Section 8.5.6) must be ensured for the duration of the activities.

- The area to be excavated must be cordoned off with red danger tape and no smoking signs displayed.
- The site engineer, contractor and environmental consultant (contamination expert) must be present on the day of excavation.
- The location of all electrical, storm water or water pipelines must be determined prior to excavation to ensure that they are not damaged in the excavation process.
- All fuel inside the tank must be removed and the tank degassed.
- The site must then be excavated to expose the tank.
- In order to ensure that the tank is not damaged during the excavation, a small backactor must be used or the area must be manually excavated, with the removed soil stockpiled in a demarcated area on site.
- All pipes and vents connected to the tank must be disconnected and sealed before the tank is removed.
- Spillage during the disconnection and removal of the fuel pump equipment, pipelines and tanks must be avoided.
- If there are no suspected leaks or contamination, the new tank can be installed.

- If a leak is suspected, soil samples must be taken from a number of points in the excavation as well as the stockpiled soil.
- Water samples must be taken if there are any free-standing pools in the excavated pit with background soil and water samples taken off-site.
- The pit must be left open while the samples are sent to an appropriate laboratory for analysis. Should the analysis indicate the soil to be contaminated, soil must be removed from the pit until all of the contaminated material has been removed.
- Contaminated water must be pumped out, collected and disposed of in an appropriate manner. Further soil samples must be taken and sent for analysis with the process repeated until analysis shows contamination to be within acceptable levels.
- The contaminated soil must be stockpiled separately and remediated on site or removed to an appropriate landfill site.
- The new tank to be placed in the existing hole.



- The removed tank to be loaded onto a flat-bed trailer and taken to the contractor's storage yard or to the Oil Company's designated storage area.
- The tank to be flushed to remove any remaining residues with the flushed water either stored for future flushing or processed to remove the fuel.
- Contaminated metal must be steam-cleaned prior to disposal. The 'steam' and condensed water must be considered contaminated and disposed of appropriately.
- If any metal, including piping, has future value it may be moved, after cleaning, to a storage area for redundant materials.
- The relevant Oil Company's existing procedure for the disposal of metal must be applied.
- The tanks to be sent for disposal (i.e. cut up to prevent re-use underground). Only those tanks found to be in excellent condition (i.e. meet SANS codes) may be used again as aboveground tanks.

- Once all tanks and pipe work have been disposed of, a risk based contamination assessment must be undertaken where applicable.
- If soil pollution is noted, the soil must either be removed and disposed of, or aerated and treated on site. A specialist is required to ascertain whether the soil is polluted.
- The tank cavity must be filled with fresh clean soil. This soil must be well watered and compacted to the Oil Company's specifications.
- Excavations must be immediately backfilled after removal of the tanks.

8.8 Financial provision for rehabilitation

The following 3 scenarios provide an indication of the financial provision required for rehabilitation (van der Walt, 2017) in the event of product spills or leakages at the filling station:

Scenario 1

Lateral extent of contamination	Contained on site
Free phase product developed	Yes
Risk Based Screening Levels exceeded	Yes. Also safety risk.
Remedial actions and cost (excl. VAT)	
Contamination assessment	R300 000
Product Recovery	R2 000 000
Monitoring and maintenance	R500 000
Total	R2 800 000



Scenario 2

Lateral extent of contamination	Contained on site. N impact off-site
Free phase product developed	No
Risk Based Screening Levels exceeded	No
Remedial actions and cost (excl. VAT)	
Contamination assessment	R180 000
Monitoring	R100 000
Total	R280 000

Scenario 3

Lateral extent of contamination	Moved off site. Potential impact on groundwater users.
Free phase product present	Yes
Risk Based Screening Levels exceeded	Yes. Also safety risk.
Remedial actions and cost (excl. VAT)	
Contamination assessment	R300 000
Clean-up by spill response team - independent Hazmat services.	R1 000 000
Remediation on and off site	R3 000 000
Monitoring and maintenance	R500 000
Total	R4 800 000



8.9 Implementation and monitoring of the EMPr

An EMPr must include -

- (g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
- (h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
- (i) an indication of the persons who will be responsible for the implementation of the impact management actions;*
- (j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;*
- (k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);*
- (l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;*

The implementation of the Environmental Management Programme (EMPr) as part of the daily construction and operational activities is crucial and requires commitment from all levels of management and the on-site workers. The successful implementation of an EMPr has the following advantages:

- Meeting legal obligations;
- Contributes to environmental awareness of the staff;
- Can facilitate the prevention of environmental degradation;
- Can minimize impacts when they are unavoidable;
- Can ensure good environmental performance and improve community relations.

An approved contractor should be appointed to do the necessary construction on the said site. The contractor and site workers must be aware of their environmental responsibilities. Penalty clauses, in terms of the environment, must be built into the contracts and must be implemented. Monitoring of the environmental management programme must take place on a regular basis in order to ensure compliance.

The contractor must inform all site workers of their environmental responsibility during the construction phase. Measures to protect the environment and mitigation measures formulated in this EMPr must be implemented by the contractor and the site workers. The contractor must thus ensure that the site workers are aware of the Environmental Authorisation and this EMPr and understand the contents thereof.

In order to achieve the above-mentioned, the contractor and site workers should undergo basic environmental awareness training with regards to the contents of this EMPr. Environmental awareness training is critical for the contractor and site workers to understand how they can play a role in achieving the objectives specified in the EMPr. The contractor must ensure that the site workers undergo the necessary environmental awareness training (see Section 8.9.1) before commencing with activities on the site.



This section must be completed on acceptance of the appointment.

MANAGEMENT ACCOUNTABILITY		
Accountability	Title	Name

MANAGEMENT DECLARATION

I, the undersigned in my capacity as designated above hereby undertake to ensure that the conditions and recommendations in terms of the Environmental Authorisation and Environmental Management Plan (EMPr) are implemented and assume responsibility and accountability in this respect.

I further understand that officials from Steve Tshwete Local Municipality, Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA), Department of Water and Sanitation (DWS) and Department of Energy may (at any time) conduct an inspection of the development in order to ensure compliance with the conditions and recommendations in the EMPr.

CONTRACTOR
<p>.....</p> <p>Name and Designation</p> <p>.....</p> <p>Signature:</p> <p>.....</p> <p>Date:</p>
EMPLOYER
<p>.....</p> <p>Name and Designation:</p> <p>.....</p> <p>Signature:</p> <p>.....</p> <p>Date:</p>



8.9.1 Environmental Awareness Plan (EAP)

An EMPr must include -

- (m) An environmental awareness plan describing the manner in which-
- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
 - (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.

It is recommended that the employees receive basic environmental awareness training. In order to ensure proper training, the applicant/site operator must develop and implement an Environmental Awareness Plan (EAP). This section provides an overview of what the proposed EAP will contain and how it will be implemented.

The following components would form an essential part of an Environmental Awareness Plan (EAP): -

- ✚ Development of an environmental policy;
- ✚ Identification of environmental impacts/risks and mitigation measures;
- ✚ Environmental training, awareness and competence;
- ✚ Environmental communication and reporting.

Development of an environmental policy

The applicant would have to compile an Environmental Policy, which is a one page statement setting out certain principles in terms of their environmental performance.

The environmental policy should indicate the following:

- The applicant's commitments in terms of the environment;
- Identify environmental impacts as a result of the activities taking place on site;
- Actions to be taken to minimize/mitigate the environmental impacts;
- Signature of management.

In order to ensure effective environmental management, it is important that the Environmental Policy is known and understood by all employees. It should thus be displayed at the filling station.

An Environmental Policy Template is provided to assist the applicant in the compilation of an Environmental Policy. A number of templates are also available on the internet.

Environmental Policy Template (taken from Richmond upon Thames, 2012)

[Insert company name here] believe that we have a responsibility to care for and protect the environment in which we operate. We are fully committed to improving environmental performance across all of our business activities, and will encourage our business partners and members of the wider community to join us in this effort.

[Insert company name here] recognises our key impacts to be in the areas of [for example]:

- energy use
- raw material use
- waste generation
- emissions to air/water
- water use



- *transport*
- *procurement*

We will strive to:

- *Adopt the highest environmental standards in all areas of operation, meeting and exceeding all relevant legislative requirements.*
- *Assess our organisational activities and identify areas where we can minimise impacts.*
- *Minimise waste through careful and efficient use of all materials and energy.*
- *Purchase sustainable products wherever feasible [e.g. recycled, FSC or low environmental impact products and energy from renewable sources].*
- *Train employees in good environmental practice and encourage employee involvement in environmental action.*
- *Reduce risks from environmental, health or safety hazards for employees and others in the vicinity of our operations.*
- *Adopt an environmentally sound transport strategy.*
- *Aim to include environmental and ethical considerations in investment decisions where appropriate.*
- *Assist in developing solutions to environmental problems.*
- *Continually assess the environmental impact of all our operations.*

[Insert company name here] have developed a series of action plans to supplement each of our environmental policy objectives. These can be found [in an appropriate place].

[Insert company name here] will periodically review performance and publish these results [in an appropriate manner].

Signed _____

Identification of environmental impacts / risks and mitigation measures

Environmental impacts/risks in terms of the development are indicated in Section 7 of this document while mitigation measures to be implemented are provided in Section 8.

Activities or work procedures that could have a significant impact on the environment have thus been identified and mitigation measures proposed in order to avoid pollution or the degradation of the environment.

This information must be communicated to the employees/contractors/site workers and thus forms the basis for developing an Environmental Awareness Plan (EAP) in order to ensure effective environmental management.

Environmental training, awareness and competence

Training is necessary in order to advance the competency of employees in implementing the Environmental Policy and the EMPr and to ensure effective overall environmental management.

The applicant/site operator must inform the contractors/site workers of their environmental responsibilities in terms of this Environmental Management Programme (EMPr). Measures to protect the environment and mitigation measures formulated in this EMPr must thus be implemented by the applicant/site operator and contractors/site workers.

The site operator must ensure that the site workers undergo the necessary environmental awareness training before commencing with activities on the site. The site operator must thus ensure that the site workers are aware of



the Environmental Authorisation and this EMPr and understand the contents thereof.

In addition, job specific training must be conducted that will be appropriate to the activity and the responsibility of the individuals. Ad-hoc training will be undertaken as required.

Through training/awareness, the applicant/site operator will also make the contractors/site workers aware of:

- ✚ the importance of conformance with the Environmental Policy and the requirements of the EMPr;
- ✚ the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;
- ✚ their roles and responsibilities in achieving conformance with the environmental policy and the requirements of the EMPr, including emergency preparedness and response requirements; and
- ✚ the potential consequences of departure from the specific operating procedures and/or mitigation measures specified in the EMPr.

Environmental training and development needs of contractors/site workers must be identified on a regular basis through:

- Identification of significant environmental impacts;
- Analysis of non-conformance and incident reports;
- Audit reports.

Environmental communication and reporting

Environmental communication and reporting form an integral part of an Environmental Awareness Plan. It is important to maintain effective communication internally and to ensure that external communication (e.g. with government departments or adjacent landowners) is maintained.

In general, environmental communication and reporting must aim to:

- ✚ Ensure that the relevant parties understand the Environmental Policy and objectives;
- ✚ Ensure that information is communicated and readily accessible to the relevant parties;
- ✚ Improve feedback of operational and environmental performance to management;
- ✚ Ensure effective and constructive communication with relevant government departments and adjacent landowners/users (if applicable);
- ✚ Ensure that records are kept of environmental communication and interaction.

The following are some of the topics that should be discussed:

- Ⓢ Cleaning of area and the importance thereof;
- Ⓢ Correct dispensing of petrol/diesel/etc. in order to prevent any spillages and therefore pollution;
- Ⓢ Emergency procedures;
- Ⓢ Environmental awareness (e.g. water, fires, noise, dust, waste management, etc.).



The applicant/site operator must conduct regular inspections to check the onsite conditions and to provide training when necessary to ensure that the mitigation measures are being implemented and that the environment is carefully looked after.

8.9.2 Site documentation and record keeping

The following documentation must be available (at all times) at the site office:

- A copy of the Basic Assessment Report and Environmental Management Programme (EMPr);
- A copy of the Environmental Authorisation;
- A copy of the Environmental Policy;
- A copy of site audit reports;
- A copy of any other permits/approvals and/or service agreements from other authorities (e.g. copy of the site licence and retail licence obtained from the Department of Energy).

The documents should be kept as hard copies as well as in electronic format.

Complaints Register

A complaints register must be kept at the site office during both the construction and operational phases. Any complaints received with regards to the project must be recorded in the complaints register. The following information must be recorded:

- Date complaint recorded;
- Nature of complaint;
- Details of complainant (name, address, telephone number, etc.);
- Manner in which complaint was dealt with;
- Date when complaint was reported to the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation.

Emergency numbers

Emergency numbers (e.g. site operator/manager, police, fire department, ambulance, etc.) must be prominently displayed at the site office.

Contact details of adjacent landowners/users must also be kept on file.

Other legislation

The following should also be displayed at the site office:

- Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended;
- Basic Conditions of Employment Act, 1997;
- Summary of the Employment Equity Act.

The applicant/site operator must also ensure compliance to any other relevant legislation (including the byelaws of the Steve Tshwete Local Municipality).

Supplementary documentation

The following supplementary documentation should also be kept at the site office:

- Site instructions;
- Emergency preparedness and response procedures;
- Incident reports;
- Training records;
- Site inspection, monitoring and auditing reports.



8.9.3 Auditing and corrective action

Environmental audits identify existing and potential environmental problems and determine what action is needed to comply with legal requirements and the Environmental Management Programme (EMPr). Subsequent audits then confirm that corrective actions have been taken and assess the effectiveness of such actions.

Construction phase:

The applicant must appoint an Environmental Control Officer (ECO) who will have the responsibility of monitoring and reporting on compliance with the conditions of the Environmental Authorisation as well as monitoring and reporting on the implementation of the EMPr.

The ECO must be appointed before the commencement of construction and must remain employed until all rehabilitation measures as well as site clean-up are completed.

The ECO will be responsible to:

- Monitor and audit the construction activities on a weekly basis;
- Keep a record of each site inspection and the findings thereof;
- Make a register of the environmental monitoring and auditing results available for inspection at the construction site office;
- Keep records relating to the compliance and non-compliance with the conditions of the Environmental Authorization;
- Make these records available to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) within seven (7) working days of the date of the written request by the Department for such records.

A good approach to facilitate legal enforceability of the EMPr during the construction phase is to integrate the EMPr into the tender and contract document (i.e. between the project applicant and the contractors) as a set of environmental specifications. The contractor will thus be informed prior to being appointed of his environmental responsibilities.

Penalties in terms of the environment should be implemented upon non-compliance. This will ensure that the project applicant does not sit with an environmental liability at the end of the contract.

A post-construction audit should be conducted prior to the contractors leaving site.

There are several levels at which corrective action can be affected, namely verbal instructions, written instructions and contract notices.

Level 1: The problem is discussed with the contractor and a solution is worked out together. The discussion is minuted for record purposes and the solution implemented.

Level 2: When a more serious infringement is observed, the contractor is notified in writing and given a deadline by which the issue must be rectified. Costs to be borne by the contractor.



Level 3: The contractor will be ordered to suspend all or part of the work until such time as the problem is rectified or remedial measures put in place. Costs to be borne by the contractor and no extension of time will be granted.

Level 4: Breach of contract and/or termination of employment. The applicant may also institute legal proceedings against the contractor.

An example of a penalty schedule is provided below.

PENALTY SCHEDULE			
Level	Description	Penalty	Offences
1	Minor offence	R1000 first offence R2000 second offence And R1000/per day that offence continues beyond notification of offence	<ul style="list-style-type: none"> Littering; inadequate or inappropriate on-site waste management or sanitation Uncontrolled noise and dust nuisance Poaching on site Inadequate soil / water protection controls for fuel storage & dispensing areas, vehicle parking areas
2	Moderate offence	R5000 first offence R10 000 second offence And R5000 per day that the offence continues beyond notification of offence	<ul style="list-style-type: none"> Trespassing onto neighbours properties Removal of indigenous trees marked for conservation purposes without the permission of the ECO, or trees in demarcated sensitive environmental zones Disposal of any form of waste to a non-approved dump site Any illegal /non-permitted abstraction or use of water from a natural resource The withholding of pertinent information or provision of false information to the ECO or Project Manager
3	Significant offence	R30 000 first offence R50 000 second offence And R30 000 per day that the offence continues beyond notification of offence	<ul style="list-style-type: none"> Non-compliance with any risk or safety management requirements Significant spillage of hazardous materials Use of natural materials not sourced from a legally permitted source Construction or use of roads/access across rivers, streams or wetlands that has not been authorized by the Project Manager and ECO
4	Serious offence	Up to R500 000 or total cost of rehabilitating damaged environment	<ul style="list-style-type: none"> Any serious pollution event or accident Any serious encroachment into demarcated sensitive environmental zones, by accident or on purpose Any serious stormwater damage that could have been avoided through appropriate management interventions

In addition to the schedule of penalties, a portion of the Retention on all contracts could be apportioned to compliance with the EMPr.

Operational phase:

The applicant/site operator will be responsible for auditing and corrective action during the operational phase of the development.



9. ENVIRONMENTAL IMPACT STATEMENT

9.1 Introduction

The proposed filling station will be located on Portion 1 of Erf 10769, Middelburg X26. The said site is zoned for business purposes (Business 2) and forms part of the approved Middelburg X26.

According to Urban Dynamics (2017), the site is also located in a secondary node area (i.e. the Middelburg Mall node; Figure 5.21) as identified in the Steve Tshwete Spatial Development Framework (SDF, 2015). The primary purpose of a secondary node is to "play a support function to the CBD and to enhance access to convenience goods and services to all communities in town" (SDF, 2015).

The said site is located south of La Roca Boulevard (i.e. access road to the Middelburg Mall) and west of Samora Machel Street (R35). The high visibility of the site from Samora Machel Street (R35) and the Middelburg Mall access road (La Roca Boulevard) lends itself perfectly in terms of visibility for a filling station.

The applicant decided to develop the said site in view of the following:

- The property already belongs to the applicant and is undeveloped.
- The property is large enough for the activity.
- The site forms part of an established township development, namely Middelburg X26 and is zoned as Business 2.
- Easy access to services (water, sewage, electricity, roads, storm water, waste removal) as the site is serviced as part of the established township Middelburg X26.
- The site is easily accessible from Samora Machel Street (R35) and La Roca Boulevard.
- The site is highly visible to passing traffic utilizing Samora Machel Street (R35) and La Roca Boulevard, which lends itself perfectly in terms of visibility of a filling station.
- Samora Machel Street (R35) is one of only three roads connecting the N4 national road with Middelburg, making the site ideal for a filling station since it is located at the entrance to the town and easily accessible.
- There are only two other filling stations located within a 3 km radius of the site.
- The filling station will provide a convenient service to the general public visiting the Middelburg Mall and surrounding businesses.
- The topography of the site is suitable for the activity. It is relatively flat, which will minimize the need for earthworks.

9.2 Alternatives

Section 4 of this report provides an indication of the alternatives investigated (e.g. land use, layout plan, service provision, etc.).

Alternative land use

The proposed site forms part of Middelburg X26 and is currently zoned "Business 2". The Middelburg Mall and Barloworld Toyota are located north of the site (Figure 5.3).



Retail City, which belongs to the applicant, is located on the western boundary of the site. The applicant could expand the existing Retail City onto the proposed site. However, the applicant did not identify a need for any more retail type businesses in the area.

The applicant wanted to capitalise on the high visibility of the site from Samora Machel Street (R35) and La Roca Boulevard and rather develop a filling station which is not catered for in the approved 'Business 2' zoning. A rezoning application would have to be submitted to the Steve Tshwete Local Municipality since the establishment of a filling station or "Public Garage" is not allowed under the current "Business 2" zoning of the site (see Section 4.2.2).

Alternative layout plans

The original layout plan (Figure 4.1) indicated a left-in-only access road from Samora Machel Street (R35) to the filling station. The left-in-only access road was re-aligned so as to avoid a direct impact on the Public Open Space (leased by Mr. G. Strydom) as indicated in Figure 4.2.

According to Roberts (2017), the left-in-only access from Samora Machel Street (R35) does not allow vehicles to get back onto Samora Machel Street (R35) directly. Customers leaving the site would only be able to exit via La Roca Boulevard (i.e. as per Layout Plan No 2, Figure 4.2). Since the dual carriageway road (La Roca Boulevard; Figure 4.2) prevents vehicles from turning right towards Samora Machel Street (R35) when leaving the site, customers would have to travel to the roundabout at the Middelburg Mall entrance, make a U-turn and travel back to Samora Machel Street (R35). This circuitous movement is undesirable as it adds approximately 460 m to the trip and adds unwarranted traffic to La Roca Boulevard (Roberts, 2017).

In view of the above-mentioned, Roberts (2017) recommended that a new layout be drafted with alternative access arrangements. **As indicated in Section 4.3.3, Layout plan no. 3 (Figure 4.3) is the preferred option with access to the site being:**

- **A left-in left-out access from Samora Machel Street (R35);**
- **A new roundabout in La Roca Boulevard.**

In addition to the changes to the access roads, Roberts (2017) also proposed that the filling station infrastructure (i.e. buildings and canopy) be turned a few degrees eastward (Figure 4.4) in order to improve visibility and allow easy access and turning for the 17 m fuel tankers.

Alternative tanks

It should be noted that 4 (perhaps 5) underground petrol and diesel tanks will be installed as part of the filling station as indicated in Section 3.1.3. An aboveground facility, usually associated with fuel depots (catering for trucks) and not public filling stations, would not fit in with the sense of place of the area and would have an aesthetic impact on the area including La Roca Boulevard, the nearby Samora Machel Street (R35) and businesses located in the SAE Business Park. The installation of aboveground fuel tanks was therefore discarded.



Alternative services

The said site is located within the Steve Tshwete Local Municipality (STLM) urban boundary and forms part of Middelburg x26 which is already serviced by the municipality. Since the said site will be connected (see Section 3.2) to the existing municipal services (water, electricity, sewage) in the area, no other alternatives with regards to services were investigated.

9.3 Public participation

The public participation process followed is described in Section 6 of this report. Identified local authorities, government departments, stakeholders and interested and affected parties were informed of the proposed development as indicated in Section 6.

The proposed development site is located on Portion 1 of Erf 10769 (Middelburg X26) (Figure 6.2) which is registered to Pearl Star Investments 85 cc. Since Pearl Star Investments 85 cc is also the applicant, **no outside party will be directly impacted by the proposed project.**

The proposed access road from Samora Machel Street (R35) (Figure 4.3) will extend cross the Remainder of Portion 27 of Middelburg Town and Townlands 287 JS belonging to the Steve Tshwete Local Municipality. As indicated in Table 6.2, the STLM was informed of the proposed development but **permission to construct the proposed access road across this property must still be obtained before any construction commences.**

In addition, a rezoning application must be submitted to the Steve Tshwete Local Municipality since the establishment of a filling station or "Public Garage" is not allowed under the current "Business 2" zoning of the site (see Section 4.2.2). **The establishment of a filling station on site would thus be dependant on approval from the Steve Tshwete Local Municipality in terms of the rezoning application.**

Mr. G. Strydom enquired whether the proposed access road to the filling station would extend across the property that he currently leases from the STLM. *The applicant subsequently decided to re-align the access road to avoid crossing the said lease area and impacting on G. Strydom. Roberts (2017) confirmed that the proposed left-in left-out access road indicated in Layout Plan no. 3 (Figure 4.3) would not impact on the area leased by Mr. Strydom (see Section 5.16.5).*

South African National Roads Agency (SANRAL) requested to be registered as an Interested and Affected Party (I&AP) since the section of the R35 extending past the site is a SANRAL road. It should be noted that a letter from SANRAL (letter dated: 21 October 2016; Appendix 10) was obtained by the traffic engineer approving 'in principle' the left-in-only access road (Figure 4.2) subject to detailed design being submitted before construction. **However, permission from SANRAL will have to be sought in view of the left-in-only road being changed to a left-in left-out road as indicated in Section 5.16.5 and Layout Plan no. 3 (Figure 4.3).**

Trans African Concessions (TRAC) indicated that they would not be affected by the proposed development since filling stations as a rule do not generate additional traffic, but merely passer-by traffic stopping at the filling



station. In addition, there is no access in close vicinity to the N4 Toll route and the R35 is also not under TRAC's jurisdiction.

The **Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA – Directorate: Environmental Impact Management)** indicated no objections with regards to the proposed project. DARDLEA however, indicated concern with regards to the clearance of vegetation and dumping of coal on and adjacent to the site as a result of illegal truck parking. *As indicated in Section 6.5, a letter (dated: 12 October 2017; Appendix 10) was forwarded to the Steve Tshwete Local Municipality requesting that the said issues be addressed.*

The **Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA - Directorate: Land Use and Soil Management)** indicated no objection since the proposed development is situated within the urban development area. The Department however indicated that mitigation measures should be implemented to prevent any contamination of natural resources and to prevent any erosion as a result of storm water. *Mitigation measures in terms of erosion and pollution control are provided in the EMPr (Section 8 of this report).*

The **Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)** indicated that there are no land claims lodged against the said property.

The **South African Heritage Resources Agency (SAHRA)** indicated that a Heritage Impact Assessment was not required due to the highly disturbed nature of the site. However, SAHRA indicated that the proposed development is located in a moderately sensitive area for fossiliferous rock strata therefore an impact assessment on palaeontological resources must be carried out in a Palaeontological Desktop Study. The study must be carried out by a suitably qualified palaeontologist.

As indicated in Section 5.13.2, Dr. H. Fourie (a qualified palaeontologist) compiled a letter requesting exemption from compiling a desktop study. A copy of the letter is provided in Appendix 13. Fourie (2017) indicated the following:

"This letter serves as a Letter of Exemption. The development will be located on a Formation with a Low Palaeontological sensitivity, therefore there is a low possibility that significant fossils will be present in the bedrock of these geological units. The formation is surrounded by the Dwyka Group of Moderate Sensitivity and the Selons River Formation with a Low Sensitivity, therefore a Desktop Study or Field Study is not necessary (Groenewald and Groenewald, 2014)."

A copy of the Basic Assessment Report (including appendices and additional photos) will be loaded onto the SAHRA website as requested.

In terms of the public participation process followed, objections were obtained from the following parties:

- Middelburg Fuel Retailers Association (represented by Mr. J.H. Myburgh)
- S. Mokoana and Total (represented by L. van Rookhuyzen).



Middelburg Fuel Retailers Association (represented by Mr. J.H. Myburgh) indicated that they strongly oppose the proposed development of a filling station as indicated in Section 6.3.3. The feasibility of the proposed filling station was questioned.

As indicated in Section 6.4.3, L. van Rookhuyzen registered as an interested and affected party on behalf of **S. Mokoana and Total**. It was indicated that the landowner of the existing site (S. Mokoana) had launched an objection to the development of an additional service station within 200m of the existing site. The original objection (dated: 2 December 2014; Appendix 10) was lodged by S. Mokoana (Basuz Trading cc) in terms of the townplanning process and addressed to the Steve Tshwete Local Municipality. Further details regarding this objection are provided in Section 6.4.3.

In addition, Total indicated that they strongly oppose the new development for the reasons contained in the original objection dated December 2014. These objections also questioned the feasibility of the filling station.

A feasibility study for the proposed filling station was conducted by WSP SA Civil and Structural Engineers (Pty) Ltd. A copy of the report is provided in Appendix 3.

A revised estimated volume forecast was provided by Roberts (2017) as part of the updated traffic impact assessment. A copy of the said report is provided in Appendix 12.

The results of the studies are discussed in Section 4.7 of this report.

Both Kotze (2017) and Roberts (2017) indicated that the proposed filling station would be feasible and would be able to sell over 300 000 litres of fuel per month as indicated in Section 4.7. According to Roberts (2017), the filling station will be of strategic importance since it is located adjacent to a Class 2 road (Samora Machel Street/R35) with direct visibility and access off this route. It will also be the first filling station entering Middelburg from the N4 national road.

There are only two competitor sites within the normal 3 km radius of influence (Table 4.3). The proposed filling station will have an initial detrimental impact on the filling stations in adjacent local markets whereby a total of 155 000 liters/month will be gained from the four closest competitor sites. Kotze (2017) however indicated that the impact of the proposed filling station on the existing filling stations is not enough to impact on the feasibility of these filling stations. In addition, general traffic growth will ensure that the short term loss will be regained over the next 3 to 4 years.

Eben Kotze of WSP Group Africa (Pty) Ltd addressed the above-mentioned objection from Total/S. Mokoana in a letter (dated: 26 July 2017; Appendix 10). The following was indicated:

The proposed filling station will not have significant impact on the new Total filling station under construction for the following reasons:

- v. Page 12 of the feasibility study mention that "the site has no direct access from the R35, and has low passing traffic on Spring Street (under 4000vpd), which means it will be a marginal site and will not have a large impact due to the planned site, as they share less than*



20% of the interceptable traffic at the intersection of the R35 and Spring Street."

- vi. On page 13 of the feasibility study, Table 3 indicate that potential pass-by traffic for the proposed site is approximately 25 000 vpd and only approx. 14.5% of this traffic will be shared with the new proposed filling station (traffic passing both facilities' accesses).*
- vii. On page 15 of the feasibility study, Table 5 indicate that only 10% of the fuel sales can be expected to be lost due to the proposed filling station, and this is mainly based on shared traffic (passing the accesses).*
- viii. Due to the large SAE Business Park (with approved rights) being developed on an ongoing basis (new industrial business sites every year) there will be ongoing annual traffic growth passing the access of the new Total Spring Street facility, therefore it is estimated that any loss in fuel sales due to the proposed new site (on the corner of Samora Machel Street and La Roca Blvd) should be recovered in a few years.*

As mentioned above, it can be concluded that the proposed filling station (on the corner of Samora Machel and La Roca Blvd) is not expected to have a significant impact on the Total filling station under construction, as the latter only has access off Spring Street (no access off the R35) and therefore do not share significant positive traffic.

The following general positive comments were received (in passing) from the surrounding businesses whilst delivering (9 June 2017) the Background Information Documents:

- No objections.
- The proposed filling station would have a positive impact in terms of attracting more people to the area, which would benefit surrounding businesses.
- Employees and customers at the Middelburg Mall would have easy access to fuel.
- Employees at the surrounding businesses would be able to purchase lunch at the convenience store.

Only one issue of concern was raised verbally in passing namely, a potential increase in traffic in the area (especially large vehicles), which could impact on traffic flow. *According to Kotze (2017), filling stations generally intercept trips from the background traffic as opposed to other developments that generate additional trips. No increase in traffic volumes are thus expected as a result of the new filling station.*

A traffic impact assessment was conducted and the results provided in Section 5.16 and Appendix 12.

It should also be noted that Trans African Concessions (TRAC) indicated that filling stations as a rule do not generate additional traffic, but merely passer-by traffic stopping at the filling station (Section 6.3.6).

As indicated in Section 10, the identified authorities, stakeholders and landowners/users will be provided with an opportunity to comment on the Basic Assessment Report. Any additional comments will be included and addressed in the final Basic Assessment Report, which will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs for decision making.



9.4 Potential impacts identified

The environmental features of the site and surrounding area are described in Section 5 of this report.

The said site is currently vacant and no formal infrastructure is present. The majority of the site has been cleared of vegetation and is used as an informal truck parking area. The eastern portion of the filling station site as well as the proposed access road footprint area comprise natural vegetation. A storm water trench and building rubble are present on site.

The Middelburg Mall (comprising various businesses) and Barloworld Toyota are located north of the site. Various businesses and a retail centre are also present north east and west of the site. The Remainder of Portion 27 of the farm Middelburg Town and Townlands 287 JS, which is located south of the site, is currently vacant and not used for agricultural purposes.

Potential impacts on the environment (both positive and negative) that are expected to take place as a result of the proposed development are indicated in Section 7 of this report.

Herewith a summary of the findings:

Geology/Geotechnical aspects

From a geotechnical point of view, the said site is suitable for development provided that the mitigation measures as indicated by Hansmeyer (2004) and included in the EMP (Section 8) are implemented.

It should be noted that the geotechnical investigation did not identify seepage and/or a perched water table on site.

A perched water table was however identified in the area where the proposed access road from Samora Machel Street (R35) would extend to the proposed filling station site.

Ecological aspects

It is not anticipated that the development will have a significant impact on **vegetation** and/or **animal life**.

The site is located in the Rand Highveld Grassland vegetation type, which is classified as Vulnerable in the list of threatened vegetation types (Venter, 2017).

Venter (2017) identified the following 3 vegetation units (Section 5.7.2) on site:

- Cleared Area (Very Low Conservation Status);
- Wetland (Moderate Conservation Status);
- Cleared Wetland (Low Conservation Status).

The western and central portions of the site as well as a portion of the vacant property south of the site are being used by heavy vehicles as an informal parking area. The vegetation was removed and a gravel layer dumped on site to prevent wheel entrenchment. Approximately 3000 m² of the 5000 m² site has been cleared of vegetation as indicated in Section 5.7.2. Only a few pioneer species (mostly alien species) are present within the cleared area (i.e. Cleared Wetland Area).



The remaining (2000 m²) vegetation on site (eastern portion) comprises disturbed wetland vegetation, which will be directly impacted by the construction activities.

The proposed access road from Samora Machel Street (R35) to the filling station site would extend through the Grassland vegetation unit (Moderate Conservation Status) as identified by Venter (2017). The proposed access road will also extend across a very small portion of wetland vegetation.

Even though the wetland vegetation is not particularly rare or unique, it is still of conservation importance and mitigation measures (Section 8) would have to be implemented to ensure no impact outside of the development footprint.

According to Venter (2017), no Plant Species of Conservation Concern were observed on site. It is extremely unlikely that any species of conservation importance will occur on the site, since the site and surrounding area are very disturbed and therefore unlikely to support vulnerable/threatened plant populations.

Venter (2017) indicated that the vegetation to the south of the site is in general in a better condition, with fewer disturbances. The remaining grassland on the investigated area is confined to the eastern portion of the area and does not contribute significantly to the ecological corridors on site. The vegetation on site therefore does not pose a limitation to the development, but the vegetation to the south of the site should remain intact (Venter, 2017).

Due to all the activities taking place in the area (e.g. business, residential, traffic, etc.), it is highly unlikely that animal species would permanently inhabit the site. In addition, the majority of the vegetation on site was removed, in effect destroying the habitat on site.

Surface water environments (including wetlands)

No rivers or streams are present on site or near the site. The closest river/streams are DuToitspruit (±1.8 km northwest of site) and the Vaalbankspruit (±2.7 km northeast of site).

Rain and storm water drain as sheet wash across the property into a culvert underneath La Roca Boulevard. A storm water trench is present on the northern boundary of the site that channels storm water from the adjacent Retail City across the site towards the said culvert. Another storm water trench drains water from the Public Open Space located on the eastern boundary of the site towards the culvert.

Venter (2017) indicated that a seep wetland is present on site and crossing the site diagonally. The seep extends upslope to the south-west of the site. The upstream (southern) portion of the wetland is still intact, with very few disturbances present. The portion of the wetland located on site is largely impacted. It is expected that the wetland extended to the north-east of the intersection of the R35 and Spring Street, but this section is however already developed and very few signs of the wetland present (Venter, 2017).

There is thus no connectivity from the main portion of the wetland (south west of the site) to any downstream wetlands. The wetland receives inflows



of water (both surface and subsurface) from the upslope areas and output is via a stormwater drain leading under La Roca Boulevard.

The soil disturbances to the south of the shopping centre encroach into the wetland and soil has been pushed into the permanent wetness zone of the wetland unit. A large section was cleared on site and trucks park on this section. Gravel were spread on this portion to prevent wheel entrenchment.

According to Venter (2017), the overall PES of the wetland unit is in class B (largely natural), but since the extent of the wetland that are covered with development could not be determined, it is expected that the PES class is closer to C or D (moderately to largely modified). The upstream (southern) portion of the wetland is still in a very good condition, while most of the disturbances are confined to the proposed site or adjacent to the proposed site. The EIS is moderate, while the hydro-functional importance is low to moderate and the direct human benefits is low. The wetland therefore has local to regional ecological importance.

Sharratt (2017) indicated that the "seep wetland" identified needs to be discussed in terms of the source of the water that supports it. The wetland identified on site can be classified as a hillslope seepage wetland (Brinson, 1993; Marneweck and Batchelor, 2002) which probably had a seasonal to temporary hydrological regime under natural conditions. Under natural (unimpacted) conditions, water inputs would have been mainly by subsurface flows (within the soil profile) from upslope areas (to the southwest of the site). It is likely that this historical wetland extended through the site.

However, after the construction of the shopping centre and clearing of vegetation for road construction as well as the creation of pathways/trenches through the seepage area, the manner in which water flowed through the landscape changed substantially. Much of the subsurface seepage was converted to surface flows along preferential flow paths and ponding of water occurred within trenches, along pipelines and within disturbed areas. As such, the extent of the wetland was altered to reflect the presence of water and obligate wetland plant species were able to colonise areas of ponding or along preferential flow paths. In addition, the surrounding hardened surfaces (tar roads and shopping centre), resulted in greater volumes of stormwater reaching the wetland, resulting in an increase in the extent of the wetland area. Therefore, the hydrology and associated vegetation, as well as soils, have all been largely modified relative to the original state and extent of the seepage wetland. The prevalence of alien vegetation on site has further decreased the ecological integrity of wetland habitats. The PES should therefore be considered Category D (Sharratt, 2017).

Sharratt (2017) indicated that many of the wetland features observed, particularly those associated with permanently wet areas, are there because of altered flows and increased stormwater inputs. Under natural conditions, the wetland would have been a seepage wetland with a temporary to seasonal (in wet years) hydrological regime. Soil augered in the southern section of the site, which was less disturbed, had very few low chroma mottles. The classification of this area as wetland was uncertain, and it was considered "marginal". It is likely that, under natural conditions, these conditions extended across the site.

Sharratt (2017) indicated that based on wetland considerations, development of the site should proceed, provided mitigation is



appropriately and effectively applied. Despite being highly modified, the “seep wetland” is likely to provide certain wetland functions, such as flow attenuation and water quality improvement. These functions can be re-engineered by responsible landscaping. The creation of an artificial wetland, for example, could be considered. The created wetland should incorporate biodiversity elements (i.e. a range of wetland vegetation and diversity of habitats), be aesthetically pleasing and provide certain wetland functions (such as water quality improvement and flow attenuation). Rehabilitation of disturbed areas adjacent to the site is also recommended.

Venter (2017) indicated that the development of the site would have a Moderate to High impact on the wetland unit, but the impact will be less than in a portion of the wetland that has not been cleared. The impact can however be avoided by constructing the filling station on an alternative property, but the location will likely be less ideal. The construction of a shopping centre will also have a Moderate to High impact on the wetland unit, but the impact will be less than for the proposed filling station, since it will not involve hazardous materials and deep excavations for the storage tanks.

Although a section is included on the changes in the hydrology of the wetland, the geohydrological assessment is the main document to consult in this regard (Venter, 2017). A filling station may not be constructed on site if it is not considered feasible in the geohydrological assessment.

Venter (2017) indicated that if development takes place it should be located within the cleared area close to the existing development and that the existing artificial canals be upgraded into the storm water system for the site.

The development of the said site would require a Water Use Licence in terms of the National Water Act, 1998 (Venter, 2017; Sharratt, 2017).

Groundwater

A groundwater study was undertaken and the results provided in Section 5.10 and Appendix 6.

According to Van der Walt (2017), the site geology hosts intergranular and fractured aquifer systems with median borehole yields ranging between 0.1 - 0.5 l/s. Aquifers in the study area are classified as minor while the aquifer vulnerability is rated as moderately vulnerable.

The depth to groundwater on-site can be described as relatively shallow, as the hydrocensus boreholes which are located around the site had static water levels measured ranging between 4.82 and 7.70 mbgl. This means that there is a small buffer zone between shallow (<4 mbgl) product infrastructure (underground fuel tanks and pipelines) and the water table (Van der Walt, 2017). The groundwater is of exceptional quality and has not been contaminated by petroleum hydrocarbon compounds (van der Walt, 2017).

The relatively shallow depth to groundwater should be taken into account by the engineer when designing the underground storage tank area.

Van der Walt (2017) further indicated that the proposed filling station will be located within an area with sensitive features based on the presence of:

- at least 5 groundwater users within a 500 m radius of the proposed site,



- a wetland (as identified by Venter (2017)) on site.

(It should be noted that the hydraulic connection between the wetland and the groundwater in the area is currently unknown (van der Walt, 2017)).

Van der Walt (2017) identified five (5) boreholes within a 500 m radius of the site. The closest borehole (BH1) is located 207 m west of the site at Retail City. Groundwater flow is in a north easterly direction towards the corner of Samora Machel Street (R35) and La Roca Boulevard.

Taking the inferred groundwater flow direction (i.e. in a north-easterly direction towards the Vaalbankspruit), spatial distribution of the identified receptors and type of use into account, it can be concluded that water supply boreholes BH1, BH3 and BH4 may be at the highest risk of being impacted, should an unforeseen release of petroleum product occur due to a leak or spill incident at the proposed filling station. This is based on the close proximity of BH1 to the site and the fact that BH3 and BH4 are located down gradient of the site (Van der Walt, 2017).

Although boreholes BH2 and BH5 are not located directly down gradient of the site, it must be taken into account that possible impacts on these boreholes cannot be excluded altogether (van der Walt, 2017). Abstraction of groundwater from a borehole causes a cone of depression over a certain radius of influence. The hydraulic gradient is relatively flat and groundwater does not necessarily only feed into a borehole from an up-gradient direction.

The only other source of possible petroleum hydrocarbon contamination within the study area is a new filling station across the R35 road (east) from the proposed Middelburg Mall filling station.

Although the proposed filling station will be located within an area where sensitive receptors are present, it is understood that the product installation will comply with the latest standards and that the necessary mitigatory measures and early warning systems will be put in place to minimise any potential impact on the environment as a result of possible product leakages and/or spillages. **From a geohydrological perspective, it is deemed unlikely that the development of the filling station will have a negative impact on the identified receptors (Van der Walt, 2017).**

A number of mitigation measures with regards to the installation of the underground tanks, stormwater management, waste management and groundwater monitoring are provided in Section 8 (EMP) of this report to reduce the potential impact on the groundwater of the site and surface water runoff from the filling station.

Traffic

The following conclusions were made by Roberts (2017) in terms of the traffic impact assessment conducted with regards to the proposed filling station:

- The local intersection associated with the proposed R35 filling station development is expected to operate at satisfactory levels of services and in a safe manner up to 2019 (see Annexure C of Appendix 12).
- No road upgrading is required by the developer except for a proposed roundabout in La Roca Boulevard (Figure 5.20).
- There are no road network concerns as this development's access can accommodate the short and long- term road layouts.
- The following road upgrades (Figure 5.20) are proposed in terms of access to the site:



- A left-in left-out access from Samora Machel Street (R35) with associated barrier;
- A new roundabout in La Roca Boulevard.

According to Roberts (2017), the roundabout layout is desirable and preferable for the following reasons:

- The wasted 460 m returning movement (travel time) is eliminated.
- All turning movements can be safely accommodated.
- Passing motorists can enter and exit the adjacent properties including the filling station in a safe manner (no u-turns).
- Combining the retail shopping centre and the proposed filling station access on the south side of La Roca Boulevard means all side road traffic is channelled in an orderly and safe manner before the roundabout.
- Travel speeds are lowered improving safety.

Roberts (2017) made the following recommendations:

- That the R35 Middelburg proposed filling station development and its associated land uses be approved from a Traffic and Transportation point of view with no road upgrades, no non-motorised transport and no public transport facilities being required.
- The site's two access points be approved in principle (as per Figures B and B1-1 of Appendix 12) for implementation.
- Permission from the Municipality must be obtained with regards to the left-in left-out access road from the R35 that extends across the Remainder of Portion 27 of Middelburg Town and Townlands 287 JS.
- Approval from SANRAL be obtained with regards to the proposed left-in left-out access road.

9.5 Conclusion and recommendation.

Based on the above-mentioned, it is felt that the development can continue, provided that a water use licence is obtained and the mitigation measures (Section 8 of this report) are appropriately and effectively applied.

The said site is already zoned for business purposes, is surrounded by development, has no downstream connectivity and has been highly modified. It is highly unlikely that the wetland will be rehabilitated/protected should the said site remain vacant.

Regular monitoring and auditing of the activities should take place during both the construction and operational phases to ensure that the mitigation measures are implemented. The filling station must be managed in such a way that it is environmentally sustainable, acceptable to the community and complies with the objectives of the National Environmental Management Act, 1998 (Act 107 of 1998). Also of importance would be the implementation of water and energy saving measures in order to reduce the carbon and water footprints of the development.



In view of the findings of this Basic Assessment, the following listed activities can be approved.

Listing	Activity
12	<i>The development of (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a water course;- excluding (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</i>
14	<i>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</i>
19	<i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse but excluding where such infilling, depositing, dredging, excavation, removal or moving – (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 of Listing Notice 2 of 2014 applies.</i>

The following conditions should be included in the Environmental Authorisation:

- *Before construction, approval must also be obtained from:

 - Steve Tshwete Local Municipality – rezoning of the site;
 - Steve Tshwete Local Municipality – permission to construct access road across their property;
 - South African National Roads Agency – approval of proposed left-in left-out access road extending from the R35 and approval of the detailed design plans.*
- *Water use licence in terms of the National Water Act, 1998 (Act 36 of 1998) to be obtained with regards to development within a wetland area (Section 21(c) and (i)).*
- *The management and monitoring measures as indicated in Section 8 (EMPr) of the Basic Assessment Report must be implemented.*



10. EVALUATION OF BASIC ASSESSMENT REPORT

10.1 Availability of Basic Assessment Report

The draft Basic Assessment Report (dated: December 2017) will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs for evaluation purposes. A hard copy of the document will also be forwarded to the following authorities for evaluation (30-day period):

- Department of Water and Sanitation;
- Steve Tshwete Local Municipality;
- Mpumalanga Tourism and Parks Agency.

A hard copy and electronic copy of the draft Basic Assessment Report will be made available during the above-mentioned period to interested and affected parties and stakeholders consulted and/or registered as part of the Basic Assessment Process (refer to Section 10.2).

The various departments, stakeholders and interested and affected parties will be requested to forward any comments on the report to the consultant within the 30-day period provided. A register will be kept of all comments received in terms of the evaluation of the report.

A hard copy of the draft Basic Assessment Report (dated: December 2017) will be made available at the Gerard Sekoto Public Library (Middelburg) for evaluation purposes. An electronic version will also be made available on the company website (www.adienvironmental.co.za) and on compact disc (cd) (on request).

The final Basic Assessment Report (incorporating comments from I&APs) will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs for final decision making.

10.2 Informing Interested and Affected Parties

The following interested and affected parties and stakeholders will be notified by means of facsimile, email, etc. of the availability of the reports for evaluation:

INTERESTED AND AFFECTED PARTY LIST	
Organisation	Name
Government Departments	
Department of Agriculture, Forestry and Fisheries	F Mashabela
Department of Agriculture, Rural Development, Land and Environmental Affairs - Directorate: Land Use and Soil Management – Ermelo	J Venter
Department of Co-Operative Governance and Traditional Affairs	M Look
Department of Energy	M Machete



INTERESTED AND AFFECTED PARTY LIST	
Department of Mineral Resources	S Mathavela
Department of Public Works, Roads and Transport	B Viljoen
Department of Water and Sanitation	NS Maliaga
Department of Agriculture, Rural Development, Land and Environmental Affairs	O Fakude
Other Organisations	
Eskom Distribution	T Ludere
Eskom Transmission	L Motsisi
Fuel Retailers Association	V Moodley
Middelburg Fuel Retailers Association	J Myburgh
Mpumalanga Tourism and Parks Agency (MTPA)	K Narasoo
Middelburg Chamber of Commerce and Industry	M Hanekom
South African Heritage Resources Agency (SAHRA)	Website
South African National Roads Agency	K Schmid, S Boezak V Bota
South African Petroleum Industry Association	F Shaik
Telkom	J Smit
Trans African Concessions (TRAC)	C Davis, R Nkosi
Local Municipality and Municipal Councillor	
Steve Tshwete Local Municipality	M Mahamba
Nkangala District Municipality	S Links, A Thwala
Ward 11 councillor	A Struwig
Surrounding Landowners	
Property (Figure 6.2)	Landowner/Contact person
Remainder of Portion 27 of Middelburg Town and Townlands 287 JS	Steve Tshwete Local Municipality
Public Open Space (Erf 10775) around Middelburg Mall	G Strydom
Barloworld Toyota Middelburg (Portion 9 of Erf 10768)	P van Dyk
SAE Business Park	
@Riders	W Schuurman
Auto Pedigree	B Pretorius
Highlands Home & Living	H Botes
HMJ Glassworx	J Brits
Middelburg Car Radio & Airconditioning	T Viljoen



INTERESTED AND AFFECTED PARTY LIST	
Shalom Slaghuis	B Lombard
The Courier Guy	S Ferreira
Basuz Trading/Total filling station (Erf 11011)	S Mokoana
Total	L van Rookhuyzen
Tracker Middelburg	M Grunig
Dezzo Trading 356 cc / Resident	RA Hanyane

10.3 Comments received

This section will be completed after the completion of the above-mentioned evaluation period.



REFERENCES

- ❖ AGIS Agriculture Potential Atlas. 2015. [www.agis.agric.za/agismap_atlas]
- ❖ Council for Geoscience. **1: 250 000 Geological Series Map, 2528 Pretoria.**
- ❖ Fourie, H. 2017. **Exemption Letter - Proposed Filling Station and Associated Infrastructure on Erf 10769, Middelburg X26, Middelburg.** Letter dated: 16 October 2017.
- ❖ Hansmeyer, P.G. 2004. **Engineering Geological Investigation, Midway Mall, Middelburg.** Report prepared by Engeolab cc. Report dated: 19 October 2004.
- ❖ **List of Ecosystems that are Threatened and in Need of Protection.** (General Notice No. 1002 of 2011). *Government Gazette* 34809: 3-541, 9 December 2011. Government Printing Works, Pretoria.
- ❖ Kotze, E. 2017. **Feasibility Study & Impact on Surrounding Sites. Middelburg R35 Mall Filling Station.** Report prepared by WSP SA Civil and Structural Engineers (Pty) Ltd. Report dated: June 2017.
- ❖ Lotter, M.C., Lechmere-Oertel, R. & Cadman, M. 2014. **Mpumalanga Biodiversity Sector Plan Handbook.** Mpumalanga Tourism & Parks Agency, Nelspruit.
- ❖ Mpumalanga Tourism and Parks Agency. 2013. **Mpumalanga Biodiversity Sector Plan Map, 2013.**
- ❖ Mucina, L. & Rutherford, M. C. (eds). 2006. **The Vegetation of South Africa, Lesotho and Swaziland.** *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- ❖ Mucina, L., Rutherford, M.C. & Powrie, L.W. (eds). 2005. **Vegetation Map of South Africa, Lesotho and Swaziland, 1: 1 000 000 scale sheet maps.** South African National Biodiversity Institute, Pretoria.
- ❖ **National Environmental Management Act 1998 (Act No. 107).** Republic of South Africa, Cape Town.
- ❖ **National List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998).** (General Notice No. 734 of 2011). *Government Gazette* 34595: 13-15, 16 September 2011. Government Printing Works, Pretoria.
- ❖ **National Water Act, 1998 (Act No 36 of 1998).** Republic of South Africa, Cape Town.
- ❖ Roberts, B. 2017. **Proposed New Filling Station on the Corner of the R35 and La Roca Blvd Middelburg (on Erf 1/10769 Middelburg): Traffic Impact Assessment (TIA), Access Application and Volume Forecast.** Report prepared by: Moyeni Professional Engineering. Report dated: 23 November 2017. Report number: Mpe0236/TIA.



- ❖ Sharratt, N. 2017. **Wetland Verification and Situational Assessment for the Proposed Filling Station Development (on Stand 10769) in Middelburg, Mpumalanga.** Report dated: 25 January 2017. Report prepared by Aqua Assess Consulting Services.
- ❖ **South African Heritage Resources Information System (SAHRIS).** 2015. [www.sahra.org.za/sahris].
- ❖ Strydom, P.J. 2017. **Civil Engineering Report: Development of the Filling Station on Portion 1 of Stand 10769, Middelburg Ext. 26.** Report prepared by Strydom & Malan Consulting Engineers. Report dated: 2 November 2017. Report number: 134/J01/out.
- ❖ **Steve Tshwete Spatial Development Framework.** 2015.
- ❖ **Steve Tshwete Municipality Town Planning Scheme.** 2004.
- ❖ Urban Dynamics Town & Regional Planners. 2017. **Motivating Memorandum in Support of an Application for the Rezoning of Portion 1 of Erf 10769, Middelburg Extension 26.** Report prepared by Urban Dynamic Town & Regional Planners. Report dated: November 2017.
- ❖ Van der Walt, J. 2017. **Geohydrological Study at Middelburg Mall Filling Station.** Report dated: March 2017. Report prepared by Geo Pollution Technologies - Gauteng (Pty) Ltd. Report number: ALMID-17-2151.
- ❖ Venter, I. 2017. **Vegetation and Wetland Assessment for the Proposed Development on Stand 10769 of Middelburg X26.** Report prepared by: Kyllinga Consulting.



APPENDIX 1:

APPLICATION FORM

- ❖ Cover letter (dated: 31 August 2017; Ref: BA 2017/04; DARDLEA Ref: 1/3/1/16/1N-104) from AdiEnvironmental cc to DARDLEA regarding submission of application form.
- ❖ Copy of the application form.
- ❖ Letter (dated: 11 September 2017; Ref: 1/3/1/16/1N-104) from the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) acknowledging receipt of the Application Form.
- ❖ Letter from AdiEnvironmental cc (dated: 17 November 2017) to DARDLEA requesting extension.
- ❖ Letter from DARDLEA (dated: 24 November 2017; Ref: 1/3/1/16/1N-104) granting extension.



APPENDIX 2:

CURRICULUM VITAE

- ❖ Mrs. A. Erasmus *Pr. Sci. Nat.*
- ❖ Ms. R. Janse van Rensburg
- ❖ List of projects



APPENDIX 3:

FEASIBILITY STUDY

- ❖ Kotze, E. 2017. **Feasibility Study & Impact on Surrounding Sites. Middelburg R35 Mall Filling Station.** Report prepared by WSP SA Civil and Structural Engineers (Pty) Ltd. Report dated: June 2017 Revision 3.



APPENDIX 4:

TEST PIT PROFILES

- ❖ Hansmeyer, P.G. 2004. **Engineering Geological Investigation, Midway Mall, Middelburg.** Report prepared by Engeolab cc. Report dated: 19 October 2004.



APPENDIX 5:

VEGETATION AND WETLAND STUDY

- ❖ Venter, I. 2017. **Vegetation and Wetland Assessment for the Proposed Development on Stand 10769 of Middelburg X26.** Report prepared by: Kyllinga Consulting.
- ❖ Sharratt, N. 2017. **Wetland Verification and Situational Assessment for the Proposed Filling Station Development (on Stand 10769) in Middelburg, Mpumalanga.** Report dated: 25 January 2017. Report prepared by Aqua Assess Consulting Services.



APPENDIX 6:

GEOHYDROLOGICAL STUDY

- ❖ Van der Walt, J. 2017. **Geohydrological Study at Middelburg Mall Filling Station.** Report prepared by Geo Pollution Technologies - Gauteng (Pty) Ltd. Report dated: March 2017. Report number: ALMID-17-2151.



APPENDIX 7

ADVERTISING OF THE PROJECT

- ◆ A copy of the advertisement published in the Middelburg Observer, 2 June 2017.
- ◆ A copy of the on-site notice.
- ◆ Printout of company website page www.adienvironmental.co.za - Document Downloads.



APPENDIX 8:

CORRESPONDENCE WITH THE AUTHORITIES AND INTERESTED AND AFFECTED PARTIES

- ◆ E-mail from AdiEnvironmental cc (dated: 12 June 2017) to:

AUTHORITY/ STAKEHOLDER	CONTACT PERSON
Department of Agriculture, Forestry and Fisheries	Mashabela, F
Department of Agriculture, Rural Development, Land and Environmental Affairs - Directorate: Land Use and Soil Management – Ermelo	Venter, J
Department of Co-Operative Governance and Traditional Affairs	Loock, M
Department of Energy	Machete, M
Department of Mineral Resources	Mathavhela, S
Department of Public Works, Roads and Transport	Viljoen, B
Department of Rural Development and Land Reform	Mdushani, F; Nkambule, N
Department of Water and Sanitation	Maliaga, NS
Eskom Distribution	Ludere, T
Eskom Transmission	Motsisi, L
Fuel Retailers Association	Moodley, V
Middelburg Chamber of Commerce and Industry	Hanekom, M
Mpumalanga Tourism and Parks Agency	Narasoo, K
Nkangala District Municipality	Links, S; Thwala, A
South African National Road Agency (SANRAL)	Bota, V
South African Petroleum Industry Association	Shaik, F
Steve Tshwete Local Municipality	Mahamba, M
Steve Tshwete Local Municipality - Councillor Ward 11	Struwig, A
Telkom	Smit, J
Trans African Concessions (TRAC)	Davis, C; Nkosi, R

- ◆ E-mail from AdiEnvironmental cc (dated: 12 June 2017) to SANRAL (K. Schmid).
- ◆ Webpage printout (dated: 12 June 2017): South African Heritage Resources Information System (SAHRIS).
- ◆ E-mail from AdiEnvironmental cc (dated: 12 June 2017) to the following interested and affected parties:

BUSINESS	CONTACT PERSON
@Riders	W Schuurman
Auto Pedigree	B Pretorius
Barloworld Toyota Middelburg	P van Dyk
Highlands Home & Living	H Botes
HMJ Glassworx	J Brits
Middelburg Car Radio & Airconditioning	T Viljoen
Rents Public Open Space around Middelburg Mall	G Strydom
Shalom Slaghuis	B Lombard
The Courier Guy	S Ferreira
Tracker Middelburg	M Grunig



APPENDIX 9:

BACKGROUND INFORMATION DOCUMENT



APPENDIX 10:

COMMENT RECEIVED

- ◆ E-mail (dated: 12 July 2017) and completed comment sheet (dated: 19 June 2017) from J Venter (Department of Agriculture, Rural Development, Land and Environmental Affairs).
- ◆ Letter from the Commission on Restitution of Land Rights (dated: 13 June 2017) to AdiEnvironmental cc.
- ◆ E-mail (dated: 21 August 2017) from AdiEnvironmental cc to the Commission on Restitution of Land Rights (F. Mdushani).
- ◆ Letter from the Commission on Restitution of Land Rights (dated: 22 August 2017) to AdiEnvironmental cc.
- ◆ Completed comment sheet (dated: 13 June 2017) from J.H. Myburgh (Middelburg Fuel Retailers Association).
- ◆ Letter from the South African Heritage Resources Agency (dated: 26 June 2017; Ref: 11187) to Pearl Star Investments 85.
- ◆ E-mail (dated: 30 June 2017) from S. Boezak (SANRAL) to AdiEnvironmental cc.
- ◆ E-mail (dated: 5 July 2017) from AdiEnvironmental cc to S. Boezak.
- ◆ E-mail (dated: 12 June 2017) from C. Davis (TRAC) to AdiEnvironmental cc.
- ◆ Completed comment sheet (dated: 9 June 2017) from S. Kader (ToolQuip & Allied).
- ◆ E-mail (dated: 12 June 2017) from G. Strydom to AdiEnvironmental cc.
- ◆ Completed comment sheet (dated: 30 June 2017) from S. Mokoana.
- ◆ Completed comment sheet (dated: 26 June 2017) from Dezzo Trading 356 cc (A. Hanyane).
- ◆ Completed comment sheet (dated: 3 July 2017) from A. Hanyane.
- ◆ Letter (dated: 12 July 2017) from The Translation World.
- ◆ E-mail (dated: 14 June 2017) from L. van Rookhuyzen (Total) to AdiEnvironmental cc.
- ◆ Letter (dated: 2 December 2014) from Basuz Trading (S. Mokoana) to the Steve Tshwete Local Municipality.
- ◆ E-mail (dated: 14 June 2017) from AdiEnvironmental cc to L. van Rookhuyzen.
- ◆ Letter from WSP (E. Kotze) to the Steve Tshwete Local Municipality.
- ◆ Letter from South African National Roads Agency (SANRAL) (dated: 21 October 2016; Ref:N11/2/3-R35/2-9) regarding the left-in-only access road to the proposed site.
- ◆ E-mail from the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) (dated: 7 October 2017) with regards to the site visit.
- ◆ Letter from AdiEnvironmental cc (dated: 12 October 2017) to the Steve Tshwete Local Municipality.



APPENDIX 11:

CIVIL ENGINEERING REPORT

- ❖ Strydom, P.J. 2017. **Civil Engineering Report: Development of the Filling Station on Portion 1 of Stand 10769, Middelburg Ext. 26.** Report prepared by Strydom & Malan Consulting Engineers. Report dated: 2 November 2017. Report number: 134/J01/out.



APPENDIX 12:

TRAFFIC IMPACT ASSESSMENT

- ❖ Roberts, B. 2017. **Proposed New Filling Station on the Corner of the R35 and La Roca Blvd Middelburg (on Erf 1/10769 Middelburg): Traffic Impact Assessment (TIA), Access Application and Volume Forecast.** Report prepared by: Moyeni Professional Engineering. Report dated: 23 November 2017. Report number: Mpe0236/TIA.



APPENDIX 13:

PALAEONTOLOGICAL REPORT

- ❖ Fourie, H. 2017. **Exemption Letter - Proposed Filling Station and Associated Infrastructure on Erf 10769, Middelburg X26, Middelburg.** Letter dated: 16 October 2017.



APPENDIX 14:

TOWNPLANNING MEMORANDUM

- ❖ Urban Dynamics Town & Regional Planners. 2017. **Motivating Memorandum in Support of an Application for the Rezoning of Portion 1 of Erf 10769. Middelburg Extension 26.** Report prepared by Urban Dynamic Town & Regional Planners. Report dated: November 2017.

