SECOND DRAFT
BASIC ASSESSMENT

FOR:

THE PROPOSED STILFONTEIN TRUCK STOP AND FILLING STATION THAT IS SITUATED ON ERF 3675 STILFONTEIN EXTENSION 7 WITHIN THE CITY OF MATLOSANA LOCAL MUNICIPALITY WITHIN THE NORTH WEST PROVINCE

Ref nr. NWP/EIA/05/2022

Date of report: August 2022

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Registered EAP number: 2019/1068

EXECUTIVE SUMMARY

1. Introduction

Sapphire Environmental Consulting was appointed by Lesedi La Ka Trading and Projects CC to undertake a Basic Assessment (BA) Process for the proposed Stilfontein Truck Stop and Filling Station that is to be situated on Erf 3675 Stilfontein Extension 7 within the jurisdiction of the City of Matlosana Municipality within the North West Province.

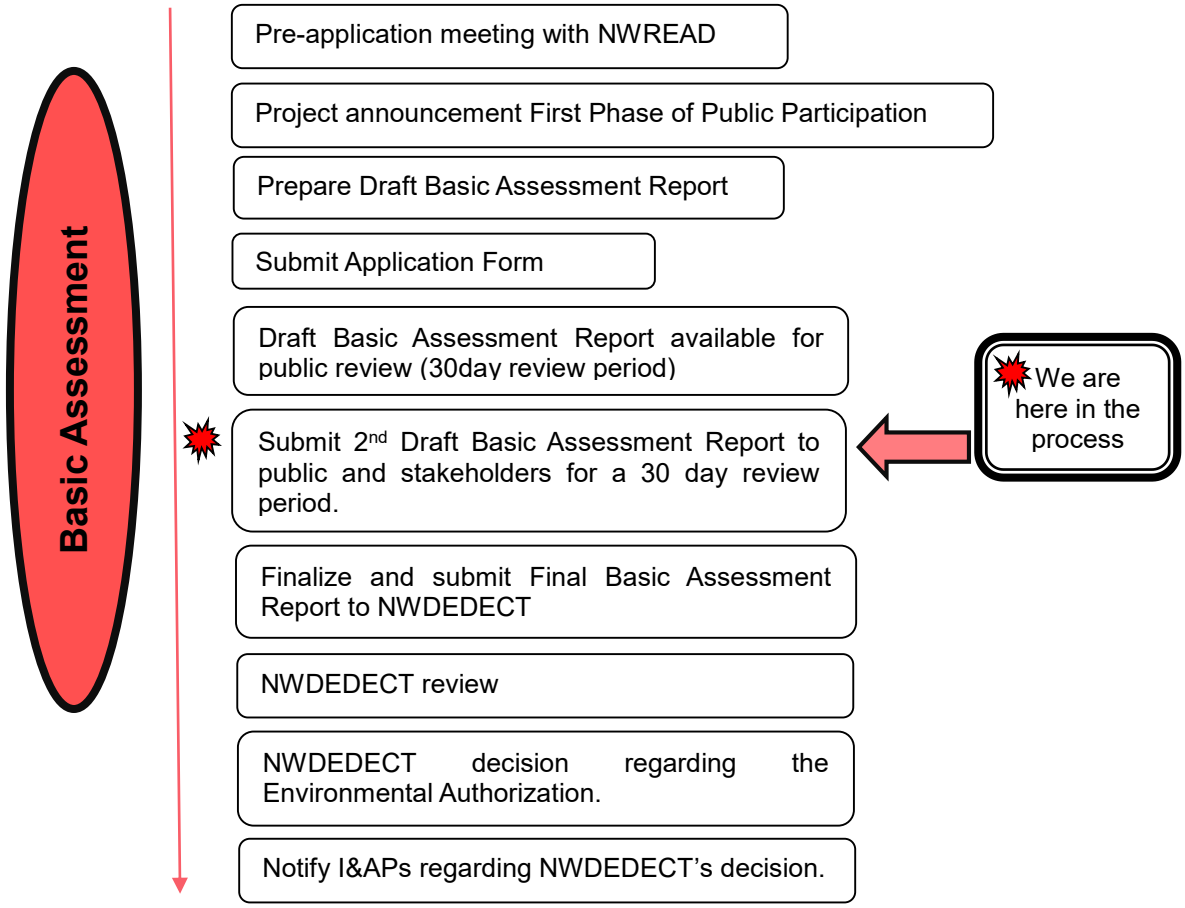
The proposed project is seeking to obtain an Environmental Authorization from the North West Department: Economic Development; Environment; Conservation and Tourism (NWDEDECT) in terms of the National Environmental Management Act (NEMA); 1998 (Act 107 of 1998) and the EIA Regulations of 7 April 2017 promulgated in terms of Chapter 5 of the NEMA. The involved activities listed in terms of GN No. 327 (Listing Notice 1) that requires that a Basic Assessment process be followed.

Objective of the Basic Assessment Process

1. The objective of the Basic Assessment process is to; through a consultative process:
   (a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
   (b) Identify the alternatives considered; including the activity; location; and technology alternatives;
   (c) Describe the need and desirability of the proposed alternatives;
   (d) Through the undertaking of an impact and risk assessment process; inclusive of cumulative impacts which focused on determining the geographical; physical; biological; social; economic; heritage; and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the aspects to determine –
      (i) The nature; significance; consequence; extent; duration; and probability of the impacts occurring to; and
      (ii) The degree to which these impacts –
         (aa) can be reversed;
         (bb) may cause irreplaceable loss of resources; and
         (cc) can be avoided; managed or mitigated; and
   (e) Through a ranking of the site sensitivities and possible impacts that activity and technology alternatives will impose on the sites and location identified through the life of the activity to –
      (i) Identify and motivate a preferred site; activity and technology alternative;

(ii) Identify suitable measures to avoid; manage or mitigate identified impacts; and
(iii) Identify residual risks that need to be managed and monitored.

An outline of the process follow below.



Schematic representation of the Basic Assessment process

Kindly note that this report serves as a Second Draft Basic Assessment as new information regarding services became available. The Traffic Impact Assessment and Feasibility Studies were updated and another input from our Wetland Specialist was obtained.

2. Project Description and location

The proposed Stilfontein Truck Stop and Filling Station entails the construction of a Truck Stop and Filling Station with other complimenting facilities; infrastructure and reticulated services that will include the following: 6 x 83 000 litre tanks (3 x above ground diesel tanks in a secure area with a bund and 3 x underground petrol tanks); 6 bay forecourt with the ability to service 6 rows of vehicles; shop; restaurant/ dining; kitchen; laundromat; separate mens and ladies ablution facilities; pay office; security; bulk storage; truck overnight parking bays; car parking bays; separate loading/ offloading courtyards; office and staff toilets; ATM machines; dry store;

coldrink store; entertainment and service yard; fuel clerk room; generator store; air compressor tank; company signage and clinic (will only be a small office/ room for treating general ailments of truck drivers) and a truck wash area. The zoning of the site is "Special" with a height of 2 storeys and a 60% coverage on the 4,4245 hectare site. The entire 4,4245 hectares will be cleared and developed for purposes of buildings; infrastructure and or pavement/ hard surfaces.

The property is situated on Erf 3675 Stilfontein Ext 7 which also forms the north east corner and intersection of the N12 (Joe Slovo Road) and Kowie Street. Loxton Street forms the northern boundary with Du Plessis Street forming the western boundary in Stilfontein Ext. 7. Klerksdorp is approximately 11,5km to the west with Khuma approximately 10,5km south east; Orkney approximately 17km south west and Potchefstroom approximately 36km east of the site.

3. Identification of alternatives

The identification of alternatives forms a critical step within the Basic Assessment process as it identifies various possible development options for a site with the main aim of modifying; where possible; the development to minimize the negative impacts on the environment. The No-Go Option as well as four alternative options were considered for the proposed site namely: layout alternatives; site alternatives; technology alternatives, activity alternatives.

Four layout alternatives were considered in detail for the proposed application. The proposed layout plan deemed to be the most feasible from all the alternatives from an environmental; geotechnical and ecological point of view.

4. Details of the Applicant; Landowner and Environmental Assessment Practitioner (EAP):

Details of Applicant; Landowner and EAP:

Applicant and Landowner Details:	Lesedi La Ka Trading and Projects CC Physical address: 91 Constantia Road Dagbreek Welkom 9459 Postal address: 150 Thelingoane Road Motse-Thabong Bloemfontein; 9463 Contact number: 086 511 3620
Environmental Assessment Practitioner (EAP):	Sapphire Environmental Consulting Contact Person: Ms Anè Agenbacht Contact number: 083 533 0420 Email address: sapphire.environmental@gmail.com

	Postal address: P.O. Box 1791; Wingate park; 0153 EAPASA Registration number: 2019/1068

5. Public Participation

Public Participation forms a crucial part of the environmental process and allows all potential or registered I&APs; Stakeholders including the Competent Authority; a period of at least 30 days to submit comments on each of the following phases of the project: advertisement period (kindly note that extensive Public Participation took place during the first advertisement period. The project was initially only for a Truck Stop and was then changed to include both a Filling Station and Truck Stop. Kindly note that the Application form and Draft Basic Assessment was only made available for the first time with the third notice of Public Participation (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders).

The first Public Participation (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders) took place from 28 August 2020 to 27 September 2020. This was during the Covid pandemic period and due to financial constrains not all of the specialist reports could be conducted and finalized. Therefore the project got to a stand still. During this time the scope of the project also changed from only a Truck Stop to a Truck Stop and Filling Station. The period between the First and Second Public Participation notification was longer than 6 months in between and therefore it was decided to re-advertised the project. All registered I&APs and Stakeholders was informed on 19 March 2021 “that the project and activities for the proposed Stilfontein Truck Stop has expanded and changed quite a bit since our initial notification of the first phase of the public participation that took place on 28 August 2020. In order to keep matters as simple as possible we will now close this Basic Assessment process for the proposed Stilfontein Truck Stop that was advertised on 28 August 2020. A new process for a Basic Assessment on Erf 3675 Stilfontein Ext 7 will commence soon. We have kept all your details and as you are a registered I&AP and or Stakeholder we will notify you of the new process for the Basic Assessment once the Public Participation process for the new application commences. Once you are in receipt of the new notice you will be allowed to comment on the new application and provide our office with your comments and or objections which will then be registered for a new process.”

During this time specialists were appointed but yet again due to unforeseen financial constrains the specialist reports could not be finalized. The Basic Assessment could not be finalized due to outstanding specialist reports. Therefore no report was submitted or circulated. Another year passed and a number of objections/ comments were received from I&APs during this period. Our office then had a telephonic conversation with Mr. R. Nemanashi from NWDEDECT to discuss the way forward. It was decided that we conduct another public participation period but this time it will be done simultaneously with the submission of the Application form and

Draft Basic Assessment Report. The Third Public Participation was conducted (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders) simultaneously with the submission of the Application form to NWDEDECT and the Draft BAR was circulated for comments to NWDEDECT; Stakeholders and all Registered I&APs between 7 April 2022 and 13 May 2022.

A notice must be given to all potential I&APs of an application or proposed application. I&APs have the right and are allowed to voice their concerns; ask questions and assist in identifying any potential impacts that the proposed development could potentially have on the environment (which include the bio-physical; physical; social; economic; public needs; values and expectations as well as to contribute information on local and traditional knowledge known to them etc.). Inputs from I&APs may include suggestions on alternatives that can possibly minimize the negative impacts and enhancing the beneficial impacts of the proposed development. These concerns are also submitted to the Environmental Authority (in this case the North West Department of Economic Development; Environment; Conservation and Tourism (NWDEDECT) along with all reports in order for the Competent Authority to make an informed decision.

I&APs need to ensure they register early in the process and provide their contact details and that of other possible I&APs who should be consulted. They should commit to be actively involved in the process and understand the issues involved and provide timeous responses to correspondence and meet the timeframes provided to them by the Environmental Assessment Practitioner (EAP) or the Competent Authority for the process to run smoothly and timely. Comments received by the Competent Authority needs to be made available to all I&APs.

Kindly note after the 30 day comment period of the 2nd Draft Basic Assessment the Final Basic Assessment Report will be submitted to NWDEDECT in order to meet the timeframes as per the National Environmental Management Act; Act 107 of 1998 and for consideration of the Environmental Authorization.

6. Issues and concerns

During all the phases of the Public Participation thus far the primary environmental issues were identified by means of analysing the project activities; components; various layout plans; potential impacts; environmental sensitivities; feedback and comments received from I&APs; desktop analysis; research of existing information and historical data available as well as a site visit by the EAP and Specialists.

The identified issues are grouped into different categories. The identified issues was investigated in-depth during the Basic Assessment (BA) process and the significance of these impacts are to be addressed within the BA report. The identified issues from the specialist reports and issues/ comments raised by the public during all phases of the Public Participation Process are listed below and will be discussed in detail in the BA Report.

The concerns raised involve the following:

- Safety and security;
- Traffic;
- Need and desirability of the additional truck stop and filling station and other uses (i.e. restaurants; shops etc.);
- Feasibility of the truck stop and filling station and complimenting uses;
- Services and infrastructure upgrading planned in the area that will benefit the community in general;
- Sense of Place;
- Noise;
- Air Pollution;
- Hazardous liquid spillages;
- Geotechnical constrains and soil erosion;
- Dolomitic conditions on the site;
- Monitoring of groundwater;
- Stormwater;
- Underground tank installations and
- Ecological sensitivities.

7. Way Forward:

This report serves as the 2nd Draft Basic Report and this report along with the Environmental Management Programme (EMPr) forms the basis upon the critical outcome of the Basic Assessment process. This report, the EMPr and all specialist reports are available to all the registered Interested and Affected Parties (I&APs) and Stakeholders for a 30 day comment period before finalizing the Final Basic Assessment report. The final BA report will then be submitted to NWDEDECT for consideration of the Environmental Authorization (EA).

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ABBREVIATIONS

BAR	Basic Assessment Report
CA	Competent Authority
CBA	Critical Biodiversity Area
DEFF	Department of Environment; Forestry and Fisheries
DWS	Department of Water and Sanitation
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GN	Government Notice
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NPAES	National Protected Areas Expansion Strategy
NWREAD	North West Department: Rural, Environment and Agricultural Development
PP	Public Participation
PPP	Public Participation Plan
SAHRA	South African Heritage Resources Agency
SANRAL	South African National Roads Agency Limited
SANS	South African National Standards
SANBI	South African National Biodiversity Institute
SDP	Spatial Development Plan
ToR	Terms of Reference
WUL	Water Use License
WULA	Water Use License Application

BASIC ASSESSMENT REPORT FOR THE PROPOSED STILFONTEIN TRUCK STOP AND FILLING STATIONTHAT IS TO BE SITUATED ON ERF 3675 STILFONTEIN EXTENSION 7 WITHIN THE JURISDICTION OF THE CITY OF MATLOSANA LOCAL MUNICIPALITY WITHIN THE NORTH WEST PROVINCE

1. COMMENTS RECEIVED FROM NWDEDECT ON THE DRAFT BASIC ASSESSMENT REPORT AND RESPONSE TO THE COMMENTS

Kindly note that the comments from NWDEDECT is in black and Sapphire Environmental Consulting's response is in green below.

The Draft Basic Assessment Report (BAR) which was submitted for comment and received by this Department on 28 April 2022 including site inspection conducted by the Department official Ms. Rofhiwa Musetsho with Ms. Anè Agenbacht and Ms. B du Toit of Sapphire Environmental Consulting on 12 May 2022 has reference.

Following the review of the Draft Basic Assessment Report, the Department has identified that some issues were not adequately addressed in the report. In this regard, the Department request that the following information should be addressed and included the Final Basic Assessment Report to be submitted to the Department for consideration:

(a) It was stated in the Draft Basic Assessment Repot that water and sanitation/ sewer pipelines will be connected to the existing network. Confirmation that City of Matlosana has capacity to provide those services must be obtained and submitted.

Response:

The updated Services Report is attached under Annexure E7. A letter was received from City of Matlosana on 20 July 2022 and is attached under Annexure G3.

The City of Matlosana confirmed the following regarding the water and sanitation/ sewer:

- Water:

Services are available for use i.e. nearby pumping 700mm bulk line or the water network within Stilfontein area. Preferably it will be advisable to connect to the water network within Stilfontein (150mm diameter) as it will have water at all the time which will be at the cost of the developer.

- Sewer/ Sanitation:

There are no existing services on site. An option of septic tank on site or small package plant would be better. There is an existing network within Stilfontein area;

these will require pipe jacking across the N12 to connect to the existing manholes within the network. The developer must at own cost install a 160mm diameter sewer network for the new development in order to provide each erf with sewer connection.

(b) A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location must be provided in the final report.

Response:

The developer identified a need for a Truck Stop and Filling Station along the N12. There are not many Truck Stops along the N12 Highway that provides proper facilities for heavy vehicles within proper illuminated parking areas with 24 hour surveillance that are securely fenced that prove a safe area for the truck drivers; their trucks and cargo. This facility will offer a safe area which will increase the comfort level of the drivers and severely reduce the road fatigue and the driver's attitude on the road. This will also reduce accidents on the roads and highway as the heavy vehicles will rather stop at this proper facility than turning off the road to sleep alongside the road whilst also obstructing vehicles on the road. This facility will furthermore allow the truck drivers to freshen up and get something to eat and drink at the convenience store and restaurants as well as utilizing the medical room "clinic" that will treat any minor ailments i.e. headaches; plasters etc. The security and surveillance at the parking area will also furthermore reduce access for unwanted trespassers.

Possible spin-offs will be generated to other related activities to the benefit of numerous job opportunities that will be created for the local work force during the construction and operational phase of the project as well as economic activities and related services. The filling station could also be convenient for the workers and parents of the Schools situated at the Spirit Word Ministries. During the Public Participation a few of the workers mentioned that it will be beneficial and convenient if they can fill up at this facility. The location of the site is regarded as being ideal for purposes of the proposed development. In order to determine the need and desirability one will consider factors like the visibility; location; access; trading market; competitor stations; traffic volumes; employment opportunities; economic factors; socio factors etc. The site was found to have good trading potential in terms of the factors mentioned as per the findings of the Feasibility Study and therefore this facility seems to be feasible.

(c) A detailed Stormwater Management Plan describing and illustrating the proposed stormwater and erosion control measures must be prepared and included in the report.

Response:

The Engineers included a section for the treatment and handling of stormwater into their Services Report. The Services Report is attached as Annexure E7.

According to the Engineers the network is designed to limit the runoff into the site as well as minimize the surface runoff in the site. Due to the flat topography as well as the absence of services, the water is to be managed through surface as well as a pipe system. Material will be required as fill to ensure drainage slopes can be achieved.

Existing services: There is no evidence of existing storm water systems on the site. There exists a borrow pit to the Southeast that will not be used for stormwater drainage. The site will be filled with G7 material (Natural Gravel), to ensure suitable drainage slopes. The Figure below shows the location of the pond and the direction of run off for the Truck Stop and Filling Station. The stormwater will be managed through surface runoff, channels, and stormwater pipes. The site will manage runoff to a Field Inlet where it will drain into a pipe. There is a connection point just east of Kowie Street, where the proposed pipeline will connect to.

(d) It was indicated in the report that the stormwater will be disposed of at the impoundment. According to the report and the site observation, the impoundment is outside the boundaries of the site. In this case a written consent from the landowner must be attached on the final report.

Response:
The stormwater was reconsidered and it was said that the stormwater will no longer be disposed of into the impoundment to the south west and outside the boundaries of the site. As mentioned under point (c) above the site will be filled with G7 material (Natural Gravel), to ensure suitable drainage slopes. Figure above under point (c) shows the location of the pond and the direction of run off for the Truck Stop and Filling Station. The stormwater will be managed through surface runoff, channels, and stormwater pipes. The site will manage runoff to a Field Inlet where it will drain into a pipe. There is a connection point just east of Kowie Street, where the proposed pipeline will connect to.

(e) It was noted on the report that the size of the development site is 4.4245 Hectares and the footprint of the development is 0.2347 Hectares. It was also stated that the dolomitic area (Zone C) will be paved/ tarred as a measure to prevent water infiltration. It remains unclear if Zone B will be left undisturbed or if the whole site will be cleared. Kindly clarify.

Response:
The entire site measures 4.4245 Hectares in extent of which the buildings will occupy an area of 0.2347 Hectares. The remainder of the site will be paved. Therefore as per the site plan the entire site will be covered by paving; buildings and infrastructure. However, according to the Geotechnical Report Zone B can be utilized for parking purposes but Zone C should stay clear of any development. Due to dolomitic constrains on the site it is recommended by the Geologist that the entire site be paved.

(f) Although the Wetland Identification and Site Assessment did not identify the watercourse on the South-western boundary side of the development site as a natural wetland. However, it is indicated that the impoundment has been existing since 1939. The Department of Water and Sanitation must be consulted regarding the status of this impoundment/ watercourse.

Response:
Please refer to Annexure G6 for the comments received from Department of Water and Sanitation whereby they stated that they are in agreement with the Wetland Identification and Site Assessment report that this is indeed an impoundment and that no Water Use License will be required.

(g) The preferred layout plan indicates that the fuel tanks be relocated further away from the impoundment.

Response:
Another layout has been considered for the site whereby the tanks are moved to the east of the site. Please refer to Alternative 3 Layout plan. The various layout alternatives are discussed in the report.

(h) The Terrestrial Impact Assessment recommended that there must be a sufficient buffer to protect the ecological functioning of the wetland. However, the report does not provide the size of the buffer. The size of the buffer area that will be provided must be indicated in the report. It has been further noted that the buffer information was just copied from the Terrestrial Impact Assessment recommendations and pasted on the EMPr without giving any clarity.

Response:

The Ecologist was contacted however; they were not appointed to conduct the wetland study and therefore the Ecologist referred us back to the Wetland Specialist. Another consultation took place between the Wetland Specialist and our office. A letter was received from the Wetland Specialist addressing this matter. The Wetland Specialist recommended that a 10 meter buffer should be applied around the impoundment. The 10 meter buffer is suggested by the Wetland Specialist with the aim of protecting ecological features. The main reason for a 10 meter buffer is the distinct signs of soil disturbance in this section and that it would be difficult to assign any ecological or hydrological functioning of the site and soils outside of a 10 meter buffer area. Below is a Google Earth image with the delineated water feature and proposed (approximate) 10 meter buffer zone provided by the Wetland Specialist.

As can be seen on the map above the buffer does not affect the site and layout and still falls outside of the boundaries of the site.

(i) The operational impacts and mitigations measures provided in the EMPr are similar to mitigation measures of the construction phase. There should be a clear distinction between impacts and mitigation measures of different phases of the project (i.e. planning, construction, operation and decommissioning). The EMPr is a living document that will stay on site throughout the lifespan of the facility. Therefore, all mitigation measures must be clearly stated in the EMPr without transferring responsibilities to other reports (e.g. specialist reports).

Response:
Noted. The EMPr was updated.

(j) It was noted that the Service Report under Sewage Services is repeatedly referring the national road as the N14. Kindly ensure that the information provided is correct and consistent.

Response:
Noted. Thank you. The Engineering Services Report was updated and is now referring to the N12 correctly.

(k) It has been noted that listed activities 9 and 10 in Listing Notice 1 are included. However, there is no information provided in the report to indicate whether the proposed development is within or outside the urban area. Furthermore, there is no information on the length of the pipeline to determine if it will trigger or not trigger the listed activity. For this activity to be triggered both thresholds (length and diameter or throughput) must be met.

Response:
Thank you. The Engineering Services Report was updated and the necessary information is included in the report. Listed Activities 9 and 10 of Listing Notice 1 will no longer be triggered due to none of the thresholds being exceeded. The length of the water pipeline is 756 meteres; the stormwater is 64 meters and the sewer will be 188 meters which is all below the threshold. The diameter and peak throughput is also below the specified thresholds for the water; stormwater and sewer. Therefore Listed Activity 9 and 10 is excluded from this application.

(l) It was noted in the report that the applicant has applied for 25kVA of electricity which is below the threshold prescribed in the EIA Regulations. Based on the information provided listed activity No. 11 in Listing Notice 1 will be triggered. Kindly clarify.

Response:
The Electrical Engineer confirmed that a maximum of 11kilovolts are required. Further consultation between the developer; Electrical Engineer and Eskom also established that Eskom does have the capacity on the feeder to connect a new 315kVA transformer. Please refer to Eskom's letter under Annexure E7. In terms of the latter information it is confirmed that Listed Activity 11 from Listing Notice 1 will be excluded from this application as it is not triggered by the proposed development.

(m) Information regarding the applicability of Listed Activity 12 in Listing Notice 1 to the proposed development must be included in the report and application form.

Response:
Due to the fact that both the Wetland Specialist and the Department of Water and Sanitation confirmed that the man-made structure is indeed an impoundment Listed Activity 12 in Listing Notice 1 is not triggered and will be excluded from this application.

Kindly note that no development and or stormwater or infrastructure will traverse the impoundment. No stormwater from the proposed development will be diverted to the impoundment. Therefore again Listed Activity 12 in Listing Notice 1 is not triggered and will be excluded from this application.

(n) According to the screening tool report, the application area is not located within a Critical Biodiversity Area (CBA). Furthermore, there is no information in the report about the Environmental Management Framework of the area in question. Kindly provide information on how listed activities 1 and 12 in Listing Notice 3 will be triggered by the proposed development.

Response:
Noted. The information is correct and we are in agreement with you that the site does not fall within any Critical Biodiversity Areas. Therefore no activity of Listing Notice 3 will be applicable. The two Listed Activities (1 and 12) from Listing Notice 3 is excluded from this application.

(o) Declaration of interest forms (original forms) must be completed by the EAP and all specialist who compiled specialist reports which form part of the Final Basic Assessment Report. All declarations must be done on the official forms obtainable from the Department.

Response:
Declaration of interest forms were obtained from all the specialists. The declaration forms will be included as part of the Final Basic Assessment Report.

(p) Based on the Engineers response to the comment from SANRAL it seems like SANRAL was only consulted regarding access to the site, not pipe jacking on the N12. Please ensure that approval for pipe jacking is granted from SANRAL and submitted with the Final BAR.
Response:
The project Engineers investigated two options namely pipe jacking and then a Septic Tank. Both options are also supported by the City of Matlosana according to the letter received from the City of Matlosana.

The Engineers discuss both options in their Services Report. SANRAL was contacted by the Engineers and discussions are underway.

(q) All comments received from the interested and affected parties must be addressed and included in the Final Basic Assessment Report.

Response:
Noted. All comments from I&APs are addressed and will be included into the Final BAR.

(r) It is the EAP's responsibility to ensure that the Basic Assessment Report and the Draft Environmental Management Programme to be submitted to the Department comply with content requirements of the relevant appendices (Appendix 1 and Appendix 4 respectively) of the 2014 EIA Regulations.

Response:
Noted. Thank you. The BAR and EMPr complies with Appendix 1 and Appendix 4 of the 2014 EIA Regulations.

It must be emphasized to the applicant that activity must not commence until the Environmental Authorization has been issued.

Response:

Thank you the Applicant is informed that no construction activity or clearing of the site may commence prior to receipt of the decision of the Environmental Authorization.

Please note that the Final Basic Assessment Report should be submitted within 90 (ninety) days of receipt of the application by the Department. Failure to submit the Final Basic Assessment Report on or before the above mentioned date will result in lapsing of the application, unless a notification in terms of Regulation 19(b) has been submitted indicating that Basic Assessment Report, inclusive of specialist reports, and EMPr where applicable, a closure plan, will be submitted within 140 days of the receipt of the application by the Department.

Response:
The NWDEDECT was informed that the additional 50 days will be taken in terms of Regulation 19(b). Therefore the Final BAR will be submitted to NWDEDECT within a period of 140 days.

Please contact this Department if you have any queries regarding this correspondence.

Response:
Thank you.

2. INTRODUCTION AND BACKGROUND

Sapphire Environmental Consulting was appointed by Lesedi La Ka Trading and Projects CC to undertake a Basic Assessment (BA) process in order to obtain the necessary Environmental Authorization from the North West Department: Economic Development; Environment; Conservation and Tourism (NWDEDECT) for the proposed Truck Stop and Filling Station that is to be located on Erf 3675 Stilfontein Extension 7 situated within the Matlosana Local Municipality and Dr. Kennith Kaunda District Municipality within the North West Province.

The proposed Stilfontein Truck Stop and Filling Station will consist of 6 x 83 000ℓ tanks (3 x above ground diesel tanks in a secure and bunded area and 3 x underground petrol tanks) in total 498 000ℓ; 6 bay forecourt with the ability to service 6 rows of vehicles; shops; restaurant/ dining; kitchen; Laundromat; separate mens and ladies ablution facilities; pay office; security; bulk storage; truck overnight parking bays; car parking bays; separate loading/ offloading courtyards; office and staff toilets; ATM machines; dry store; coldrink store; entertainment and service yard; fuel clerk room; generator store; air compressor tank; company signage; clinic (mainly a medical room that will consist of one of the offices or a small room for minor ailments of truck drivers for example plasters; pills etc. any other ailments will have to be treated by a proper clinic or hospital); truck wash as well as the reticulation of services in Stilfontein Ext 7, Erf 3675 located within the City of Matlosana Local Municipality within the North West Province on the approximately 4.4245 hectares site.

3. DETAILS AND EXPERTISE OF THE EAP

Sapphire Environmental Consulting has been appointed by Lesedi La Ka Trading and Projects CC as the independent Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment Process for consideration of the Environmental Authorization (EA) in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations (GN R982) of 8 December 2014 and updated on 7 April 2017.

Sapphire Environmental Consulting was established during October 2017 but only commenced operating under the name since January 2018 and has since been involved in numerous environmental projects from cradle to grave in and around the borders of South Africa. Sapphire provides a wide range of environmental services as well as water use license applications to its clients within both the governmental institutions as well as public and private sector. It is through our work, experience and expertise of our environmental consultants and our specialists that we are able to deliver value for our clients. We as a firm strife to exhibit a steadfast willingness to explore the alternatives to help resolve environmental solutions and then we are able to work with other parties to find and achieve astounding results. Our vision is to provide our clients with skilled environmental advice in a timely and efficient manner. We strive to handle each matter with accountability and responsiveness. We focus our attention on the environmental aspects of the project as well as our clients' desire. Our vision reflects our integrity, values, service, excellence and teamwork.

Contact details of Sapphire Environmental Consulting:
Name of the EAP: Anè Agenbacht
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Email address: sapphire.environmental@gmail.com

Ms. Anè Agenbacht commenced her role as EAP during 2003 and has approximately 19 years' experience in the environmental field. She obtained her Bachelors of Art degree in Environmental Management. She furthered her studies in the educational sector and she obtained CUM LAUDE status in her Honours degree. She also attended many environmental law and short courses through IMBEWU; North West University; IAIA and UNISA during the years to update her on the latest environmental matters.

Over the years she has been a leader of various teams with dynamic outcomes. Ms. Agenbacht has excelled in this role and maintained one of the highest levels of productivity. She produces a high volume of work while maintaining high standards for quality and accuracy.

She has proven to be a most reliable and effective member of the consulting team. She is dedicated and committed and takes extreme pride in her work. She possesses the ultimate "can do" attitude while taking on all tasks with a positive energy and a smile. Her upbeat personality and engaging personal style enables her to interact effectively with clients and staff. Ms. Agenbacht is very well organized and keeps track of the details necessary to coordinate projects of any kind and run an efficient office.

Ms. Agenbacht takes initiative to go beyond the expected parameters of her job. All the intangibles that lead to success in the workplace are in order with her. She is extremely efficient in her approach to work, well-presented and able to work both independently and as part of any team. She has shown great leadership abilities and is extremely successful as a team manager.

Her expertise in the environmental field covers a wide range of environmental disciplines which includes to name a few: Basic Assessments; Environmental Impact Assessments; Environmental Management Programmes; Environmental Objections and Appeals; Social Impact Studies; Environmental Control Officer, Water Use License Applications and Public Participation. During the years she obtained experience in training and overseeing many environmental reports for sign off prior to submission. Her experience to date involved applications for residential; commercial; industrial; filling stations; mixed use developments; linear activities; storage facilities; cell phone masts; remediation and emergency procedures for an oil spillage etc. She has been involved with over 300 projects over the years.

Please refer to Appendix H for the Company Profile of Sapphire Environmental Consulting and the Curriculum Vitae of Ms. Anè Agenbacht.

4. LOCATION OF THE SITE

The property is situated in Stilfontein Ext 7 on Erf 3675 which also forms the north west corner and intersection of the N12 (Joe Slovo Road) and Kowie Street. Loxton Street forms the northern boundary with Du Plessis Street forming the western boundary in Stilfontein Ext. 7. Klerksdorp is approximately 11,5km to the west with Khuma approximately 10,5km south east; Orkney approximately 17km south west and Potchefstroom approximately 36km east of the site.

The proposed site is mainly vacant with a couple of trucks and busses being parked on a section of the site as can be seen on the photo below.

The surrounding area consist mostly of undeveloped land with Spirit Word Ministries and several farmhouses to the north of the site. Fair Haven Guest House and UPark, We Sell it, car sales is situated to the east of the site. The N12 borders the site to the south and the Stilfontein Residential area is situated further to the south of the site. The site to the west is still vacant.

Table 1: Property description and physical address of Municipalities:

Property description/physical address:

Province	North West Province
District Municipality	Dr. Kennith Kaunda District Municipality
Local Municipality	Matlosana Local Municipality
Ward Number(s)	Ward 39
Farm name and number	Stilfontein Ext 7
Portion number	Erf 3675
Size of the site	4,4245 hectares
Footprint of study area:	4,4245 hectares
Coordinates of the site	26°50'21.75" S 26°45'21.38" E 1. North eastern corner: 26°50'17.71" S 26°45'23.49" E 2. South eastern corner: 26°50'24.91" S 26°45'24.63" E 3. South western corner: 26°50'26.06" S 26°45'19.20" E 4. North western corner: 26°50'18.43" S 26°45'18.01" E
SG Code (21 Digit Surveyor General Code of cadastral land parcel)	TOIP00450000367500000

Please refer to Figure 1 for the locality and orientation map and Figure 2 for the aerial map below:

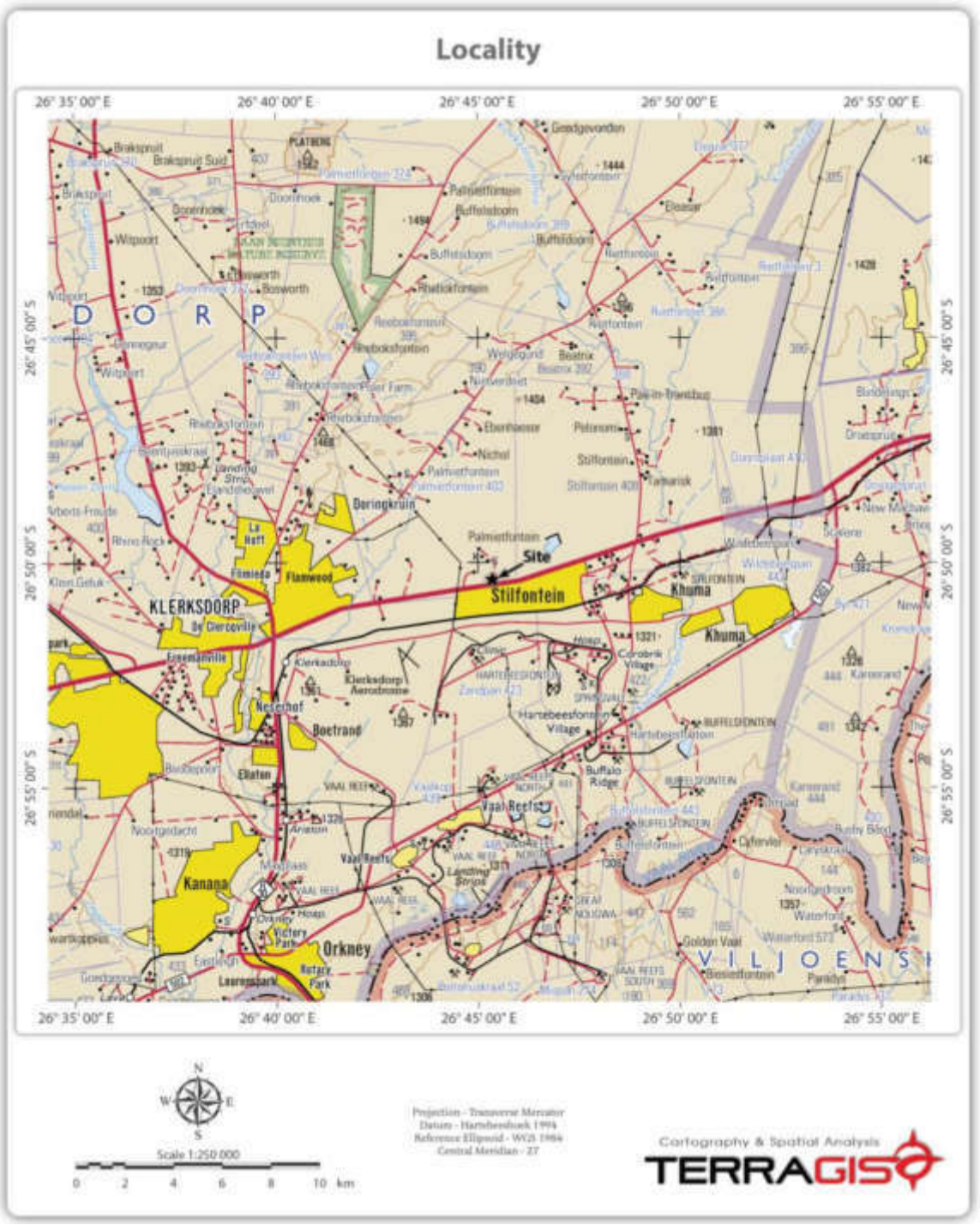


Figure 1: Locality and orientation Map

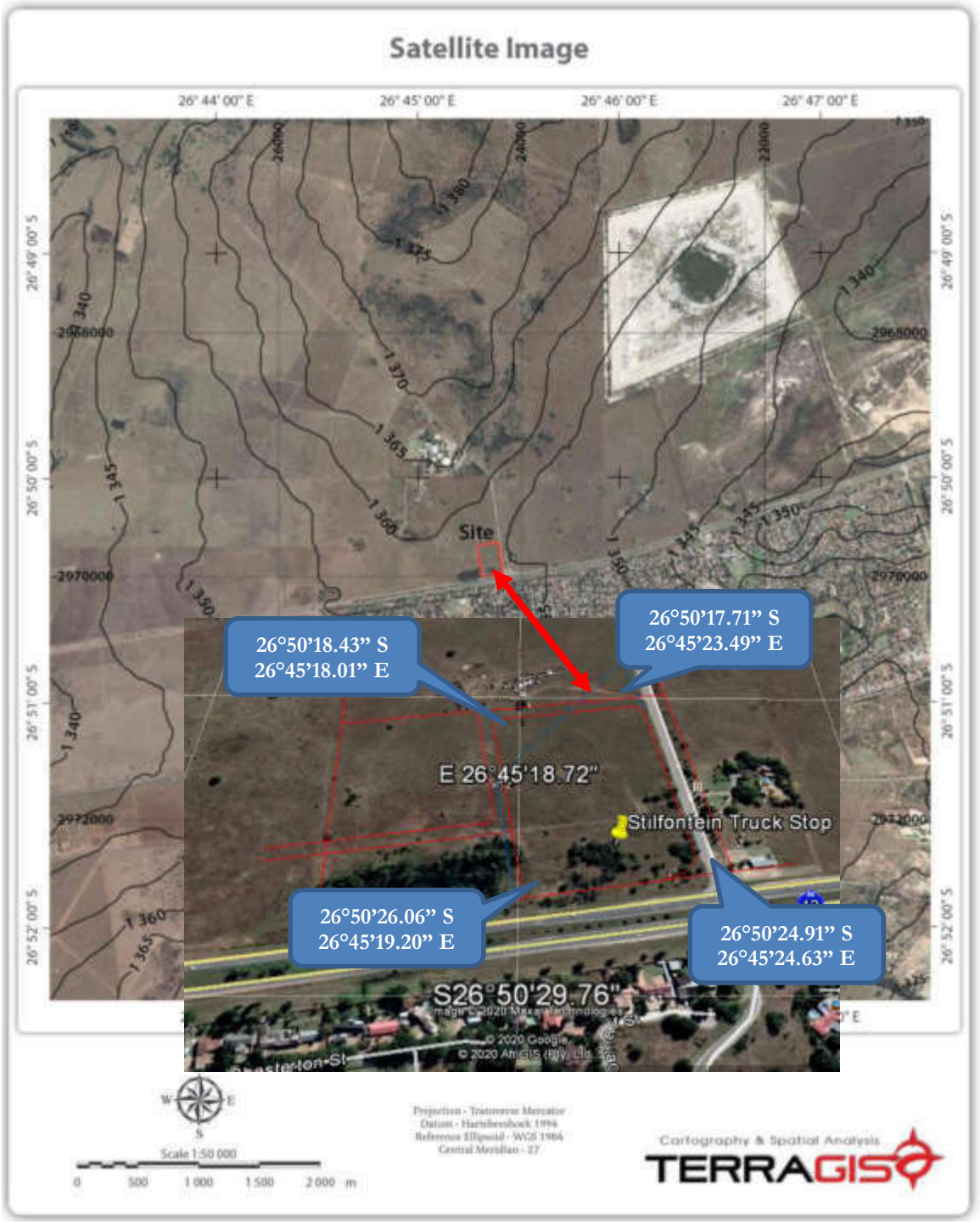


Figure 2: Aerial Map

5. PHYSICAL SIZE OF THE ACTIVITY

PHYSICAL SIZE OF THE ACTIVITY

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

	Size of the activity:
Proposed activity ***(Total environmental (landscaping, parking, etc.) and the building footprint)***	4,4245Ha
Alternatives:	
Alternative 1 (if any)	4,4245Ha
Alternative 2 (if any)	4,4245Ha
	Ha/ m^2

or, for linear activities:

	Length of the activity:
Proposed activity	[redacted]
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	m/km

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

	Size of the site/servitude:
Proposed activity	4,4245Ha
Alternatives:	
Alternative 1 (if any)	4,4245 Ha
Alternative 2 (if any)	4,4245 Ha
	Ha/m^2

6. SITE ACCESS

The site is situated at the intersection of the N12 and Kowie Street. Access to the site is planned off Kowie Street. Please refer to the photo and SG Diagram below.

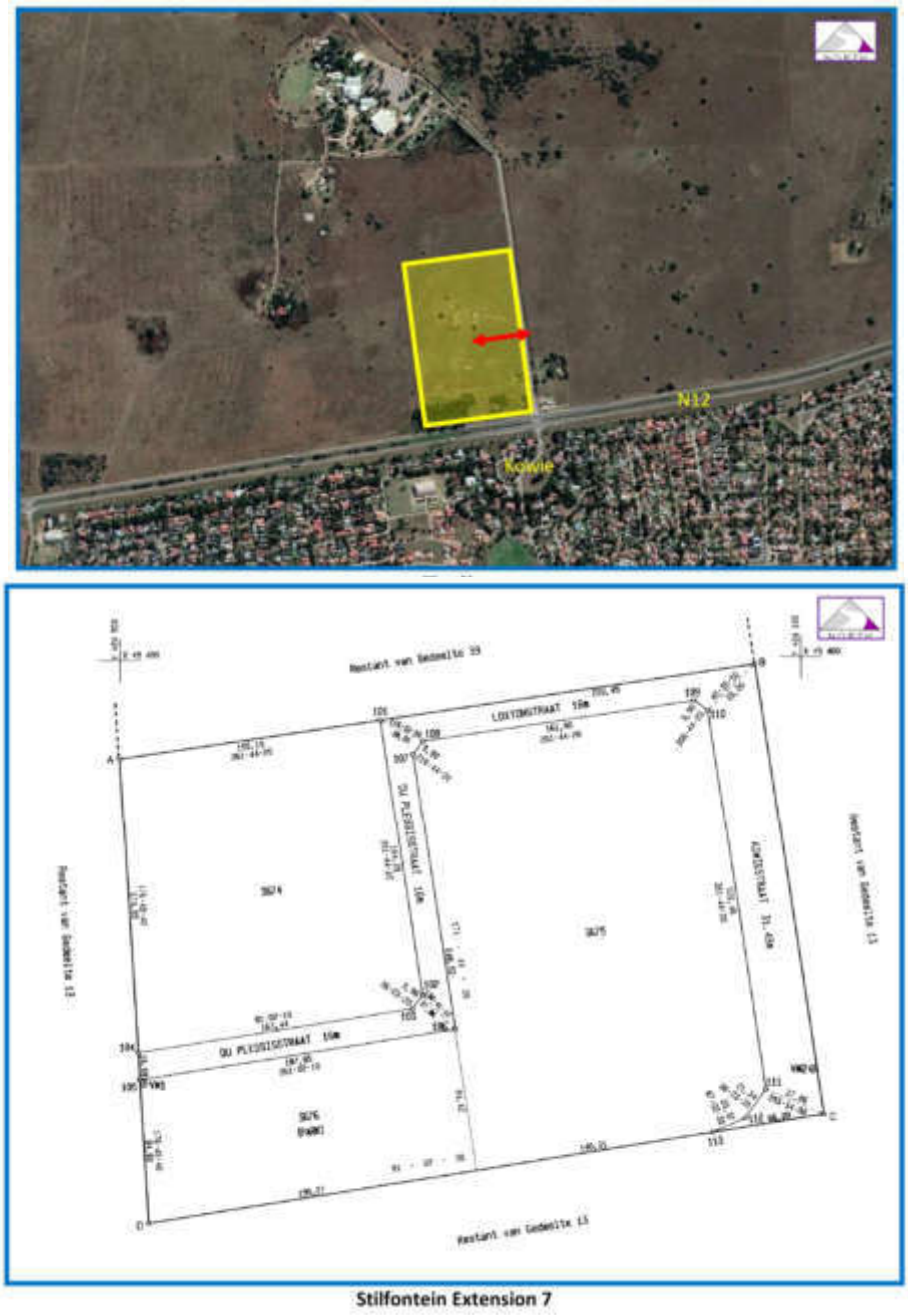


Figure 3: SG Diagram of Stilfontein Ext 7

Please refer to the photos of the intersection of the N12 Highway and Kowie Street

Intersection N12 and Kowie Street direction West

Intersection N12 and Kowie Street direction west

Intersection N12 and Kowie Street direction East

Intersection N12 and Kowie Street direction east

Intersection N12 and Kowie Street direction North

Intersection N12 and Kowie Street direction north

Intersection N12 and Kowie Street direction South

Intersection N12 and Kowie Street direction south

Kowie Street with the site on the right

Kowie Street with the site on the right

The Site

The site

The access to the truck stop is proposed off Kowie Street at least 100m from the road reserve of the N12 and no direct access is allowed of the N12. The building line on National Roads is normally 20m.

The access design is based on the swept path of a WB67 Interstate Semi-trailer (22.1m long) with a turning radius 28.22m kerb to kerb.

The following is proposed for the access:

- Inbound lane: 6m
- Outbound lane: 6m
- Staking length: 25m from the road reserve of Kowie Street.
- Separate left-turn lane on Kowie Street at the access.

The conceptual access layout is depicted in the two figure below. (Figure 4)

The swept path analysis is depicted in the photo below (Figure 5).

The swept-path of the design truck is also depicted on the site plan as depicted in the map below. The design vehicle can be accommodated on site.

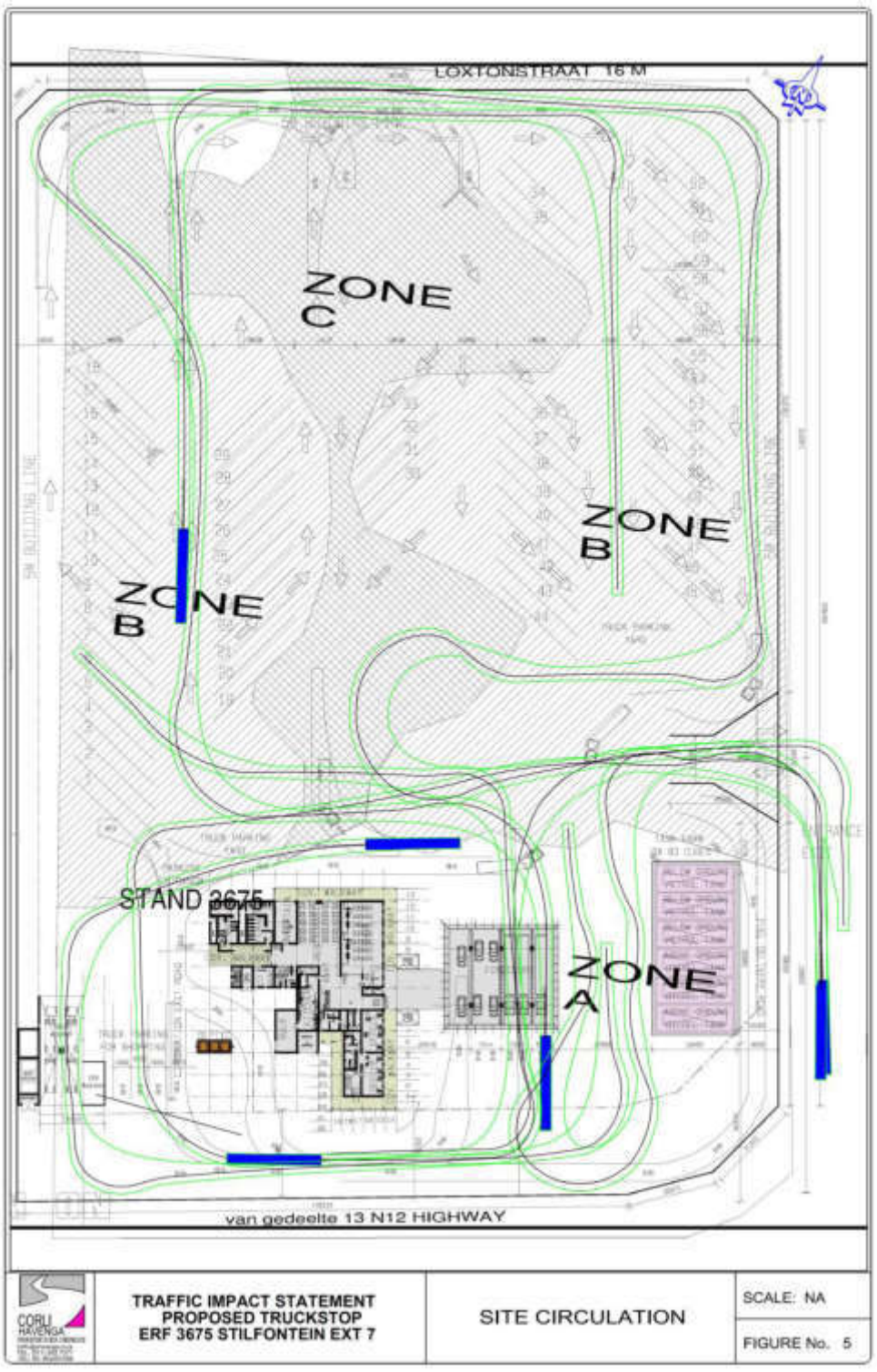
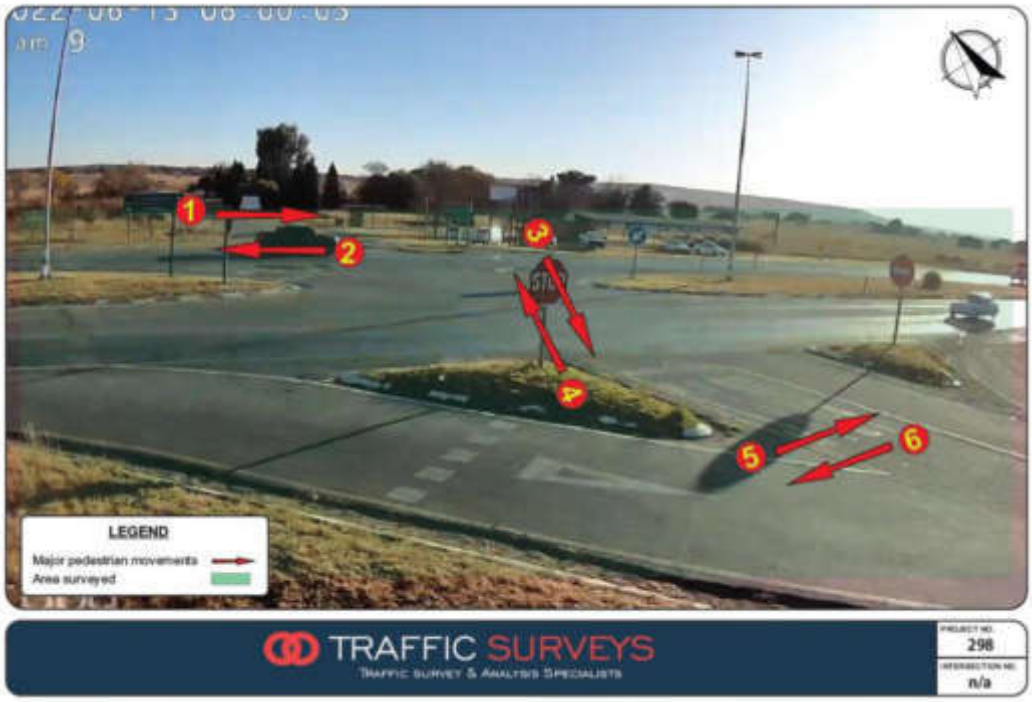
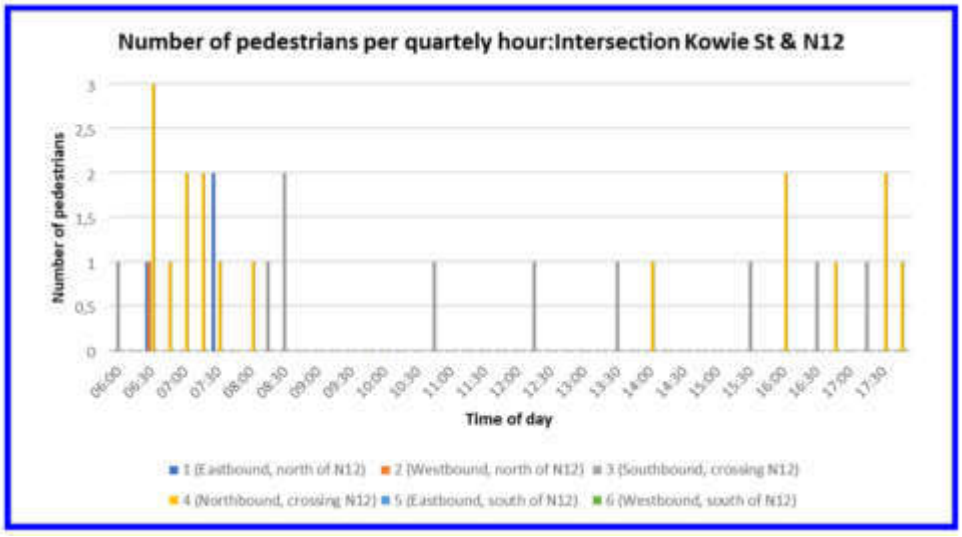


Figure 6: Site circulation plan above.

Please refer to the Traffic Impact Study under Appendix E9 for enlargements of the maps used under this section of the BA report.

Non-motorised Transport:
A pedestrian survey was conducted as part of the traffic counts. The survey was done for the period 06:00 – 18:00. The results are depicted in the graph below.





During the 12-hour survey period +- 28 pedestrians crossed the N12 at Kowie Street. The N12 is a dual carriageway road and pedestrians cross with a stage crossing. Pedestrians can wait in the median before crossing the next carriageway.

It is expected that the staff be provided with staff transport due to the location of the filling station and truck stop. No provision for public transport facilities is proposed; staff can be picked-up and/ or dropped-off on site. The closest major intersection along Kowie Street in Stilfontein is Fielding street; which is approximately 540m walking distance from the site.

Walking distance will be longer than 540m and therefore no significant increase in pedestrian movement is expected.

In terms of COTO TMH 16 Volume 2: “No pedestrian or cyclist crossings; formal or informal; may be provided on Class 1 roads (urban and rural) and measures must be introduced to prevent or limit pedestrian or cyclist access to such roads.

On Class 2 to 5 roads; formal pedestrian and cyclist crossings may be provided at full intersections or intersections that are traffic signal controlled. Care should be taken when such crossings are provided at accesses or intersections that are priority controlled as well as at roundabouts”.

“A formal pedestrian or bicycle crossing (priority or signal controlled) is warranted at locations where the pedestrian volume during any hour (of the year) exceeds 20 pedestrians per hour and where either of the following conditions exists:

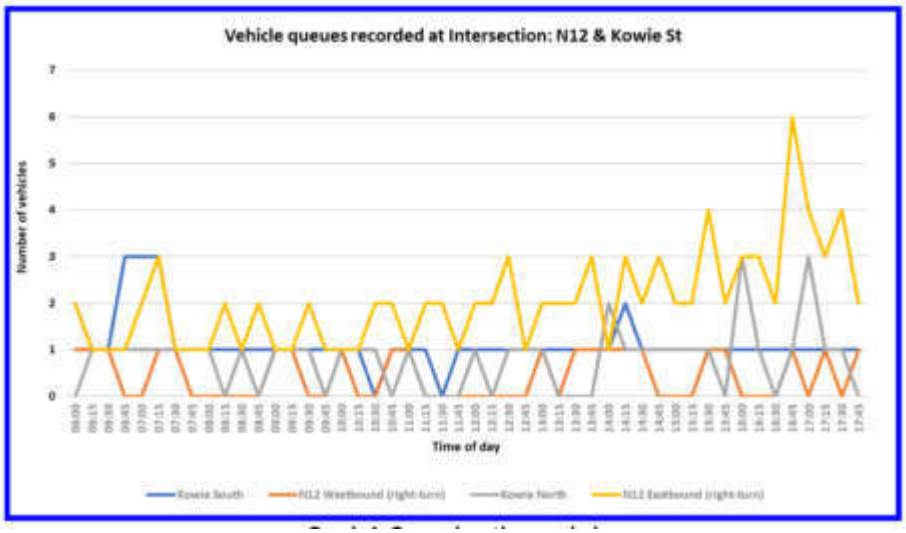
a) More than two lanes have to be crossed in one stage without provision of a pedestrian or cyclist refuge (e.g. on a median) or;
b) The traffic flow that must be crossed in one stage exceeds 1 000 vph during any 15-minute period of a normal week.

Signalised pedestrian or bicycle crossings may be provided when traffic signals at such crossings become warranted in terms of the traffic signal warrants.”

Pedestrian traffic has a significant impact on the capacity of intersections; particularly in high density development nodes. In such areas grade separated pedestrian facilities should be considered.

During the traffic surveys queues were observed on certain approaches of the intersection and the queue length were also extracted from the date to determine if a traffic signal can be warranted at this intersection.

The data is presented in the annexure and depicted the graph below.



The existing pedestrian volumes and the queue lengths do not warrant the implementation of traffic signals.

Road improvements:

- Intersection:N12 and Kowie Street:

  The existing intersection can accommodate a staged crossing with auxiliary lanes for rith-turn vehicles from both sides of Kowie Street to merge with the N12 traffic. Left-turn slip lanes are provided on both the N12 and Kowie Street on all the approaches.

  The intersection design was checked based on the swept path of a WB67 Intesrstate Semi-trailer (22,1m long) with a truning radius of 28.22m kerb to kerb.

  The following upgrades are proposed at this intersection to accommodate the truck movements:

  - Widen left-slip lane approach on N12 western approach form 3.0m to 4.0m;
  - Widen auxiliary lane for rith-turn vehicles form Kowie Street northern approach from 3.0m to 4.0m.

Axillary lane on N12 to be widened

- Widen right-turn lane on N12 eastern approach form 3.0 to 4.0m.

Right-turn lane on N12 eastern approach to be widened

- Widen auxiliary lane for left-turn vehicles from Kowie Street northern approach form 3.0m to 5.0m.

Auxiliary lane on N12 for left turn vehicles from Kowie Street

The conceptual access layout is depicted within the Traffic Impact Study. The intersection is currently provided with high mast lighting as depicted in the photo below.

High mast lighting on N12

The splay at the opposite corner of Kowie Street and the N12 appears not to be in place based on the Erf Boundary fence. This needs to be verified to accommodate the road widening for the design truck swept path.

- Kowie Street:

  Kowie Street form the N12 to the access of the truck stop needs to be upgraded to accommodate the increased trucks volumes. The traffic impact study does not address the pavement conditions. The phoses below indicated the current conditions of the surface layer.

Kowie Street's road surface

Site circulation:

The swept-path of the design truck is also depicted on the site plan within the Traffic Impact Study. Please refer to Annexure E9 for the Traffic Impact Study.

7. DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY:

Table 2: Listed activities

Listed activity as described in GN 327,325 and 324	Description of project activity
Listing Notice 1 (GN 324):	
Activity 9: The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or stormwater – (i) With an internal diameter of 0,36 metres or more; or (ii) With a peak throughput of 120 litres per second or more; Excluding where – (a) Such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) Where such development will occur within an urban area.	**Excluded and not listed.** <u>Reason:</u> Water: • The length of the pipeline is 756 meters. • Internal diameter of pipe = 0.16 meters. • Peak throughput = 50ℓ/s. The capacity of the water pipeline and length is below the threshold. Therefore **Not Listed**. Stormwater: • The length of the pipeline is 64 meters.

	• Internal diameter of pipe = 0.525 meters. • Peak throughput = 0.78ℓ/s. The capacity of the water pipeline and length is below the threshold. Therefore **Not Listed**.
Activity 10: The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage; effluent; process water; waste water; return water; industrial discharge or slimes – (i) With an internal diameter of 0,36 metres or more; or (ii) With a peak throughput of 120 litres per second or more; Excluding where- (a) Such infrastructure is for the bulk transportation of sewage; effluent; process water; waste water; return water; industrial discharge or slimes inside a road reserve or railway line reserve; or (b) Where such development will occur within an urban area.	**Excluded and Not Listed**. If the Municipal connection is chosen the length of the pipeline will be 188 meters with a internal diameter of 0.16 meters and a peak throughput of 0.308ℓ/s. The capacity is below the threshold and therefore **Not Listed.**
Activity 11: The development of facilities or infrastructure for the transmission and distribution of electricity – (i) Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; (ii) Inside the urban areas or industrial complexes with a capacity of 275 kilovolts or more; Excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is – (a) Temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometres or shorter in length; (c) Within an existing transmission line servitude; and (d) Will be removed within 18 months of the commencement of development.	**Excluded and Not Triggered.** The Electrical Engineer confirmed that a maximum of 11kilovolts are required. Therefore this activity will be excluded and is **Not Triggered** by the proposed development.
Activity 12: The development of (i) Canals exceeding 100 square metres in size; (ii) Channels exceeding 100 square metres in size; (iii) Bridges exceeding 100 square metres in size; (iv) Dams; where the dam; including infrastructure and water surface area; exceeds 100 square metres in size; (v) Weirs; where the weir; including infrastructure and water surface area; exceeds 100 square metres in size; (vi) Bulk stormwater outlet structures exceeding 100 square metres in size; (vii) Marinas exceeding 100 square metres in size; (viii) Jetties exceeding 100 square metres in size;	**Excluded and Not Listed.** This activity is excluded as an impoundment is situated outside the boundary of the site. In the Wetland Identification and Site Assessment Report the Wetland Specialist clearly explains why this is an impoundment and not a wetland/ watercourse. The report confirmed the following: "the site investigation yielded

(ix) Slipways exceeding 100 square metres in size; (x) Boardwalks exceeding 100 square metres in size; or (xi) Infrastructure or structures with a physical footprint of 100 square metres or more; 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 metres or more; Where such development occurs – (a) within a watercourse; (b) in front of a development setback; or © If no development setback exists; with 32 metres of a watercourse; measured from the edge of a watercourse; 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 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads; (or) 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.	that the impoundment on the site was excavated and is currently being used to accommodate what appears to be stormwater runoff or similar water. From the soil, land surface and historical conditions of the site (as identified earlier) the only conclusion is that there is no natural wetland present on the site. The impoundment is a man-made feature and the soil conditions do not indicate the presence of any natural wetland conditions." Please refer to Annexure E7 for the Wetland Identification and Site Assessment Report. It is also furthermore understood from the Engineer that the Municipality drain all of Stilfontein's water to the impoundment. Please refer to the email received from the Engineer under Annexure E7. Therefore this activity is **Not Listed**.
Activity 14: The development and related operation of facilities or infrastructure; for the storage; or for the storage and handling; of a dangerous good; where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	**Listed Activity**. The proposed project is for a Truck Stop and Filling Station with 6 x 83 000 litres tanks each (3x underground petrol tanks and 3 x above ground diesel tanks). Therefore this activity is **applicable**.
Activity 19: The infilling or depositing of any material of more than 5 cubic metres into; or the dredging; excavation, removal or moving of soil sand; shells; shell grit; pebbles or rock or more than 5 cubic metres from (i) a watercourse; (ii) The seashore; or (i) The littoral active zone; an estuary or a distance of 100 metres inland of the high-water mark of the sea or estuary; whichever distance is the greater – But excluding where such infilling; depositing; dredging; excavation; removal or moving – (a) Will occur behind a development setback;	**Excluded and Not Listed.** No attenuation of water into the impoundment to the west and outside the boundary of the site. No construction work of pipelines for the proposed project will traverse the impoundment and therefore this activity is **Not Listed**.

(b) Is for the maintenance purposes undertaken in accordance with a maintenance management plan; or (c) Falls within the 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 in Listing Notice 2 of 2014 applies.	
Activity 27: The clearance of an area of 1 hectares or more; but less than 20 hectares of indigenous vegetation; except where such clearance of indigenous vegetation is required for – (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan.	**Listed Activity.** The property is currently mainly vacant and a portion of the site is used for parking of trucks and busses. The entire site which measures 4,245 Hactares will be cleared and used for paving; buildings and infrastructure and therefore this activity is **Listed.**
Listed Notice 3:	
Activity 1: The development of billboards The development of billboards exceeding 18 square meters in size outside urban areas; mining areas or industrial complexes. North West: i. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ii. World Heritage Sites; core of biosphere reserve; or sites or areas identified in terms of an international convention; iii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; iv. Areas within 5 kilometers from protected areas identified in terms of NEMPAA or a biosphere reserve; v. Any protected area including municipal or provincial nature reserves as contemplated by NEMPAA or other legislation; or All Heritage Sites proclaimed in terms of National Heritage Resources Act; 1999 (Act No. 25 of 1999).	**Excluded and Not Listed**. The site does not fall in a Critical Biodiversity or Sensitive Area and is therefore **Not Listed**.
Activity 12: The clearance of an area of 300 square metres of more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. North West: i. World Heritage sites; core of biosphere reserve; or sites or areas identified in terms of an international convention;	**Excluded and Not Listed**. The site does not fall in a Critical Biodiversity or Sensitive Area and is therefore **Not Listed**.

ii. A protected area including municipal or provincial nature reserves as contemplated by NEMPAA or other legislation; iii. All Heritage Sites proclaimed in terms of National Heritage Resources Act; 1999 (Act No. 25 of 1999); iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; v. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or Areas within a watercourse or wetland; or within 100 metres form the edge of a watercourse or wetland.	

8. DESCRIPTION OF THE POLICY AND LEGISLATIVE CONTEXT WITHIN WHICH THE DEVELOPMENT IS PROPOSED:

Table 3: Applicable Legislation

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of the Republic of South Africa, Act 108 of 1996, Section 24 (Environmental Right)	The Constitution stipulates that everyone has the right to an environment that is not harmful to their health or well-being; and the right to have the environment projected, for the benefit of the present and future generations, through reasonable legislative and other measures. The Constitution paved the way for environmental legislation in South Africa.	National	1996
National Environmental Management Act: (Act No. 107 of 1998 as amended)	The proposed development requires a Basic Assessment to be conducted in terms of the EIA Regulations of 2014 and updated on 7 April 2017.	National and Provincial	27 November 1998
National Water Act (Act No. 36 of 1998)	A Water Use License won't be applicable to this proposed development. Please refer to Annexure G6 for a letter from DWS confirming no WULA will be required for this project.	National and Provincial	20 August 1998
National Environmental Management	The Screening Report done in terms of the Department of Agriculture; Forestry and Fisheries confirmed the Aquatic	National	2004

Biodiversity Act (Act No. 10 of 2004)	Biodiversity and Terrestrial Biodiversity themes has a low sensitivity. In terms of the Terrestrial Biodiversity Impact Assessment conducted by Enviridi Environmental Consultants the study area falls within the 2626DD Quarter Degree Square. Information on plant species recorded was extracted from the POSA only database hosted by SANBI; based on a 25km x 25km square surrounding the project area. A list of plant species that have previously been recorded in the aforementioned area is provided in the Biodiversity Assessment Report under Appendix F1. The results indicated that two hundred and eighty-eight (288) plant species have been recorded in the area queried; consisting of sixty-eight (68) families. The most prominent family is Asteraceae; with forty (40) species; followed by Poaceae; with thirty-seven (37) species. Twenty-one (21) endemic species and twenty-nine (29) exotic species are known to occur within the area queried. Twenty-five (25) species listed for the area are classified as species of conservation concern (SCC) according to the North West Biodiversity Management Act (Act No. 4 of 2016) (NWBMA); IUCN Red Data List and the endemism of the species. None of the species recorded for the area queried are classified in terms of the ToPS list or NFA. Of the twenty-nine (29) exotic plant species recorded on POSA for the area queried; five species are listed as alien and invasive plant (AIP) species in NEMBA; 2004 (Act 10 of 2004).		

	Twenty (20) species were found to possibly occur on site that have medicinal uses: Aloe ferox Arctotis arctotoides Artemisia afra Carissa bispinosa Clematis brachiate Convolvulus sagittatus Crinum Bulbispermum Dombeya rotundifolia Grewia occidentalis Helichrysum nudifolium Hypoxis hemerocallidea Pelargonium sidoides Pellaea calomelanos Ranunculus multifidus Salix mucronata Senna italic Tarchonanthus camphoratus Vachellia karroo Withania somnifera Zanthoxylum capense		
Guidelines on Red List Plant Species	In terms of the Terrestrial Biodiversity Impact Assessment conducted by Enviridi Environmental Consultants Twenty-five (25) species listed for the area are classified as species of conservation concern (SCC) according to the North West Biodiversity Management Act (Act No. 4 of 2016) (NWBMA); IUCN Red Data List and the endemism of the species. None of the species recorded for the area queried are classified in terms of the ToPS list or NFA. Vachellia erioloba (Camel thorn) which is a Protected Tree in terms of the National Forest, was identified to occur in Vegetation Unit 2.	Provincial	2006
National Forests Act (Act No. 84 of 1998) (NFA)	In terms of the NFA, forest trees or protected species may not be cut, disturbed, damaged, destroyed and their products may not be possessed,	National	1998

	collected, removed, transported, exported, donated, purchased or sold – except under license granted by the Department of Agriculture, Forestry and Fisheries (DAFF now DEFF). (Terrestrial Biodiversity Assessment; Enviridi Environmental Consultants; 2020).		
GDARD Ridges Policy	The development area was assessed in terms of slope to aid the assessment and classification in terms of GDARD requirements (Ridge Guideline). Once a ridge has been identified, it is further classed according to its level of transformation into different classes. No ridges occur on-site or will be impacted nor within a 200m perimeter.	Provincial	2001 as reviewed and updated in January 2004 and April 2006
National Environmental Management Protected Areas Act (Act No. 57 of 2003)	The proposed project does not fall within any protected areas. According to the SAPAD database the closest area protected in terms of NEMPAA, Faan Meintjies Private Nature Reserve, is located 11.5km north-west of the project area. The Vaal Grasslands NPAES focus area is located 7.5km to the east of the project area.	National	2003
National Environmental Management Waste Act (Act No. 59 of 2009) as amended	The project will produce normal construction waste during the construction phase of the project. The contractor on site will be responsible to transport the generated waste to a registered landfill site. During the operational phase the City of Matlosana will remove the waste on a weekly basis.	National	2009
National Waste Management Strategy; 28 January 2021	The National Waste Management Strategy is applicable to the proposed Truck Stop and Filling Station.	National	28 January 2021
National Environmental Management Air Quality Act 2004 (Act 39 of 2004) National and	The emission that will be released during the construction phase will mostly be in the form of dust and smoke. During the operational phase emissions will be related to the transfer of fuel from tankers to the storage tanks and again	National and Provincial	2004

Provincial 2004	from the storage tanks to vehicles. Exhaust fumes from vehicles will also emit emissions at the filling station and truck stop. Mitigation measures as per the Environmental Management Programme (EMPr) should be implemented to control all air pollution and dust on the site.		
National Heritage Resources Act (Act No. 43 of 1983)	The Heritage Practitioner; Ms. Leonie Marais confirmed no heritage sites are present on the area earmarked for development. It should be noted that the sub-surface archaeological and/ or historical deposits and graves are always a possibility. Care should be taken during any work in the entire area and if any of the above is discovered; an archaeologist/ heritage practitioner should be commissioned to investigate.	National and Provincial	1999
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	According to the DAFF Screening Report the site is classified having a medium agricultural sensitivity with patches of high sensitivity situated in the south western corner spreading out to the centre of the site. The Resource Auditor Directorate Land and Soil Management commented as follows on the proposed application: From a Conservation of Agricultural Resources Act 43 of 1983 point of view, there are no aspect of concern because the area to be disturbed is not economically viable base on its agricultural production potential. The development is given a go ahead however the developer should ensure that soils erosion around the edge of the development area is combated.	National	1 June 1983
Environmental Management Framework	The Department does not have any Environmental Management Framework (EMF) which covers the specific site. There is however an EMF for the North	Provincial	2014

	West province but it does not cover all areas within North West. The Biodiversity of the site along with conservation and ecological sensitive areas were taken into consideration. The Biodiversity and Sensitive areas are low according to the Screening Report.		
Model Noise Regulations published under the Environment Conservation Act, 1989 (Act 73 of 1989)	Noise will be generated during the construction and operation phase of the proposed development. The contractors on site should ensure to comply with the National Noise Regulations. The noise generated will be within the generally acceptable noise levels; between 45 to 65 dB(A). South African Noise levels are measures; controlled and regulated by the following legislation: • SANS 10103:2003 (SABS 0103) • National Noise Control Regulations (now replaced by provincial regulations) and • SANS 10117:2003.		
Occupational Health and Safety Act (Act No. 85 of 1993) and Occupational Health and Safety Amendment Act (Act No. 181 of 1993)	This act is applicable during both the construction and operational phase of the development. The site managers and contractors on site should manage the workers strictly according to the Occupation Health and Safety Act in order to prevent any injuries to the staff. During the operational phase the owner needs to be mindful of the liability and implications of the Occupational Health and Safety Act and any possible impacts should be mitigated. Should any injuries or diseases occur compensation will need to be discussed according to the Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993) in the event where any legitimate matters arise.	National and Provincial	1993

	If any emergency arise on the site the Emergency Response Plan should be followed. This plan is included under Annexure E10.		
Hazardous Substances Act (No. 15 of 1973)	This act is applicable to the proposed project as dangerous goods and chemicals will be handled on the site.		1973
Petroleum Products Act; 1997 (Act No. 120 of 1977)	A Site and Retail License is applicable and will have to be obtained from the Department of Mineral Resources and Energy (DMRE) prior to the construction and operational phase of the proposed project. This will only be possible to obtain once the Environmental Authorization is granted.	National	1997
The Deeds Registries Act (Act No. 47 of 1937)	The proposed site is owned by the applicant Lesedi La Ka Trading and Projects CC.	National and Provincial	1 September 1937
Spatial Planning and Land Use Management Act (SPLUMA) No. 16 of 2013	The site is zones as "Special" for purposes of a Public Garage; Drive-in Restaurant; Shops and Service Enterprises. Therefore the Town Planning rights are already in place for the proposed Truck Stop and Filling Station and no SPLUMA or Rezoning application is required.		2013
Municipal System Act 32 of 2000	The proposed project needs to adhere to the Municipal Systems Act and By-Laws (i.e. electricity; water; waste; fire etc.) thereof.	Local	2000
Dr. Kenneth Kaunda District Municipality - Integrated Development Plan (IDP) 2017/8-2021/22	The development is in line with the IDP of Dr. Kenneth Kaunda District Municipality.	District	2017-2022
City of Matlosana Local Municipality – Final Integrated Development Plan (IDP) 2019-2020	The development is in line with the IDP of City of Matlosana Local Municipality.	Local	2019-2020
Dr. Kennith Kaunda District Municipality – Spatial	The proposed project is in line with the Urban Spatial Development Plan of Dr. Kennith Kaunda District Municipality as the study area is indicated as a Priority 1	Local	2004 and 2011

Development Plan 2004 and 2011	Investment Node (can be regarded as a Primary node) and earmarked as a Development Corridor.		

9. SOCIO-ECONOMIC CONTEXT AND NEED AND DESIRABILITY OF THE PROPOSED PROJECT:

The subject site is situated in Stilfontein area and falls within Ward 39 of the City of Matlosana Municipality within the Kennith Kaunda District Municipality. The study area is located at the intersection of the N12 and Kowie Street. The N12 is a major transit route which is the main road into and out-of the Stilfontein area as well as the major corridor between Klerksdorp and Potchefstroom. The N12 forms the border of the site to the south with the residential area situated further south on the other side of the N12. Spirit Word Ministries Church is situated to the north of the site with mostly undeveloped land and several farmhouses surrounding the site. Kowie Street forms the eastern border of the site with Fair Haven Guest House further to the east of the site. The corner portion of land at the intersection of the N12 and Kowie street, to the east of the site is used for car sales.

Dr. Kenneth Kaunda District Municipality Final IDP 2017 - 2022:

The following information are taken from the Final IDP of Dr. Kenneth Kaunda District Municipality; 2017 – 2022.

Dr. Kenneth Kaunda District Municipality consists of four local municipalities i.e. Matlosana; Tlokwe; Maquassi Hills and Ventersdorp.

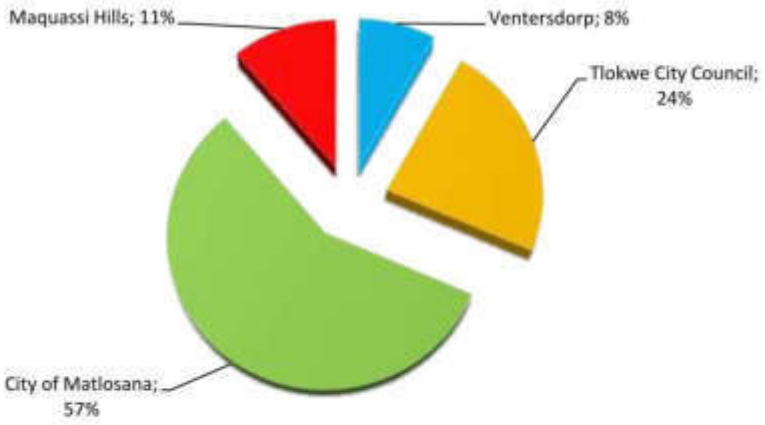
Total Population:

According to Statistics South Africa (Census 2011); the population of the Dr. Kenneth Kaunda District (based on 2010 boundaries) is 695 933, increased from 599 670 in 2001 (Consider the table below). The population is unevenly distributed among the four Local Municipalities and the average annual growth rate of the district is 1.49%.

Table 4: Dr Kenneth Kaunda District Population Figures

Municipality	Total Population		Population (%)		Annual Growth (%)	No. of Households	
	2001	2011	2001	2011	2001-2011	2001	2011
Kenneth Kaunda DM (DC40)	599 670	695 933	100	100	1.49	153560	208047
Ventersdorp (NW401)	43 078	56 702	7.18	8.15	2.75	11109	14562
Tlokwe City Council (NW402)	128 353	162 762	21.40	23.39	2.38	32038	52537
City of Matlosana (NW403)	359 202	398 676	59.90	57.29	1.04	93339	120442
Maquassi Hills (NW404)	69 037	77 794	11.51	11.18	1.19	17075	20505

The majority of the Dr. Kenneth Kaunda District population reside within the City of Matlosana LM (57.29%), followed by City of Tlokwe LM (23.39%). Two Local Municipalities with the smaller percentages of the Dr. Kenneth Kaunda District population are Maquassi Hills (11.18%) and Ventersdorp (8.15%). The number of wards per local municipality is Matlosana (35), Tlokwe (26), Maquassi Hills (11) and Ventersdorp (6) for a total of 78 in the DM; as on 2 September 2010. The number of houseolds within the Dr. Kenneth Kaunda Distrit was estimated at about 208,047 during 2011 (StatsSA; Census 2011).



Source: Statistics SA, Census 2011

Figure 7: Population of Dr Kenneth Kaunda DM

Population by Age

The population pyramid in figure 5 below indicates that there were more people in younger ages; particularly in age groups 0-4 and 5-9, and less people in older ages; particularly form the ages 65 and older. A new cycle of the pyramid is being developed form the lower ages; baring some significant changes in the mortality rates.

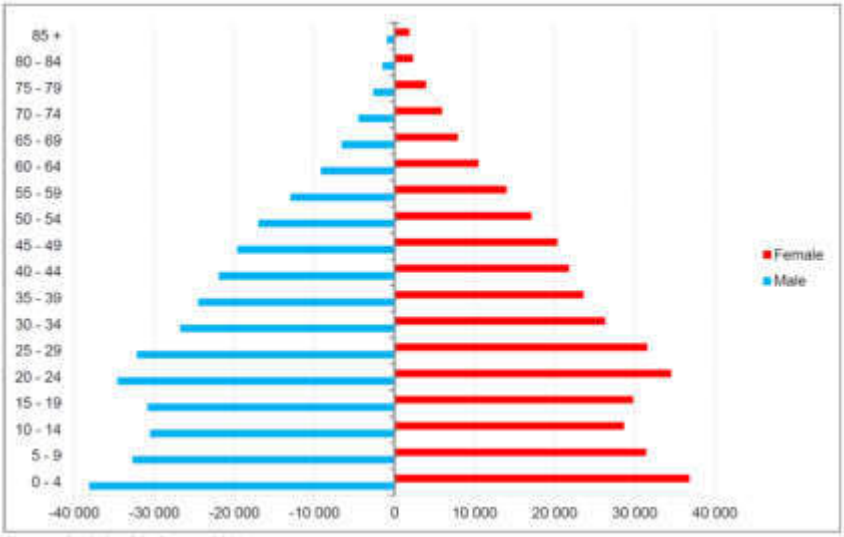


Figure 8: Population Pyramid

Population Growth Rate:

The total population according to the official Statistics SA data have increased from just under 600 000 to 695 933 in 2011. This represents an average annual growth rate of approximately 1.49%. Various population growth rates are being utilized for the purpose of population projections in various existing policy documents and plans. Two alternative population projections utilizing the base year figure in 2007 as provided by Statistic SA (634 134) is provided for the purpose of the SDF. The first scenario assumes a constant annual growth rate remaining at 1.3% per annum form 2007 to 2020. The second scenario assumes a decreasing growth rate using a figure of 1.3% per annum up to 2010, a figure of 1.1% per annum from 2011 to 2015, and 0.9% from 2016 to 2020. The projected 2020 population figure based on these alternative scenarios will be 750 000 and 728 000 respectively.

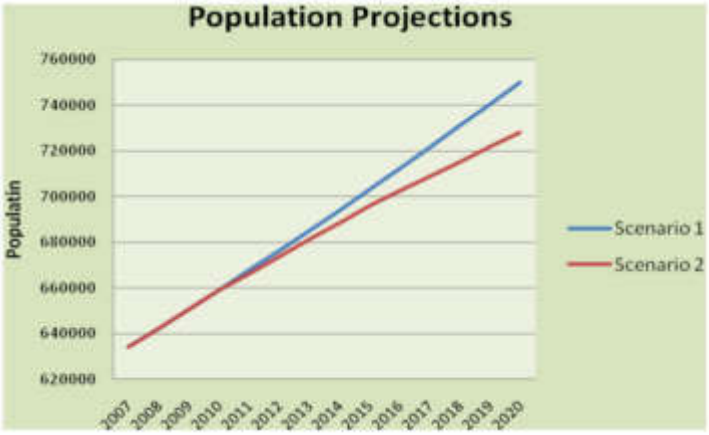
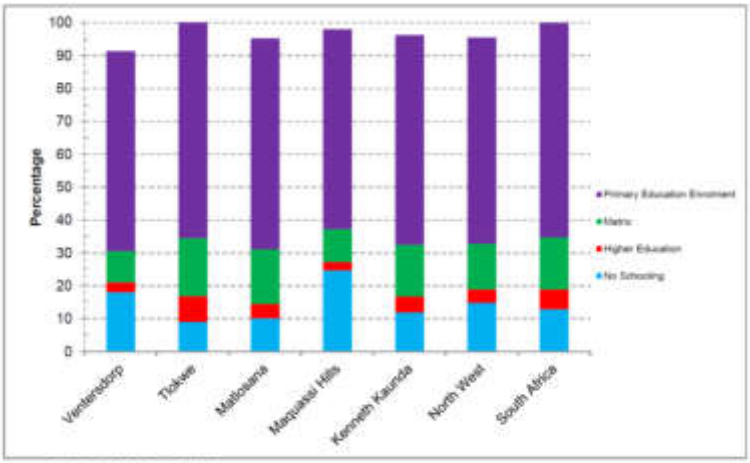


Figure 9: Population Projections (StatsSA; Community Survey; 2007)

The population characteristics and trends as referred to above also need to take cognizance of migration trends to and from the district and its surrounding areas.

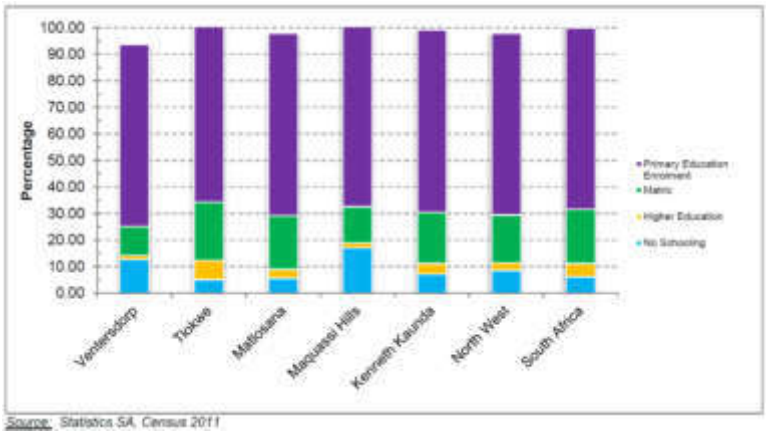
Population Education Levels:

The status and changes in the education profile of the district population between 2001 and 2011 is depicted on Figures xx below. Although there has been a significant improvement in overall skills levels (most notably the decrease of adult illiteracy); the increase in the proportion of population with tertiary degrees have been very limited. The most notable feature is the substantial decrease in adult literacy ranging between 4% in the case of Tlokwe to just under 8% in the Maquassi Hills LM. However; the proportion of the population with tertiary education decreased as a percentage of population size; but the highest population in this category is the Tlokwe LM with a 9.9%, and they have suffered only about 1.1% decline form 11% in 2001 in tertiary education. All municipalities experienced a decline in this area; with Ventersdorp and Matlosana experiencing higher decreases in the extent of the population with tertiary education with 2.2 and 1.6% respectively. The increase in size of the population with matric in the district is below that of the country and the province in general, and this is reason for concern. Only Tlokwe has a better matric outlook than the NW Province average.



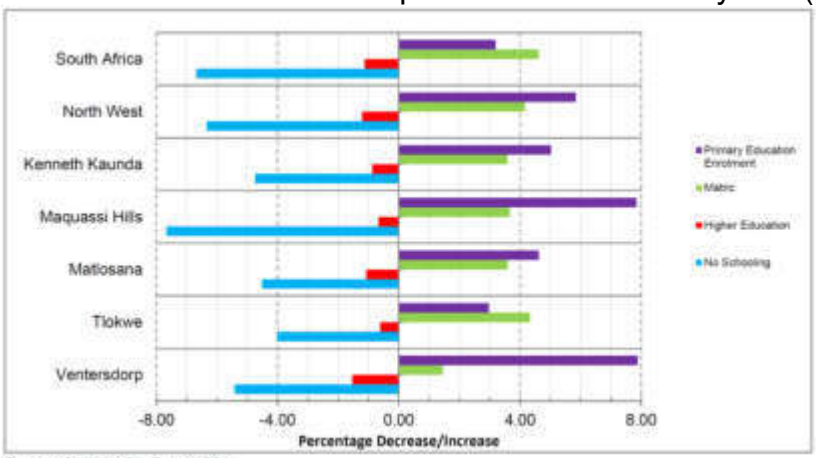
Source: Statistics SA, Census 2011

Figure 10: Education Profile of Population Older than 20 years (2001)



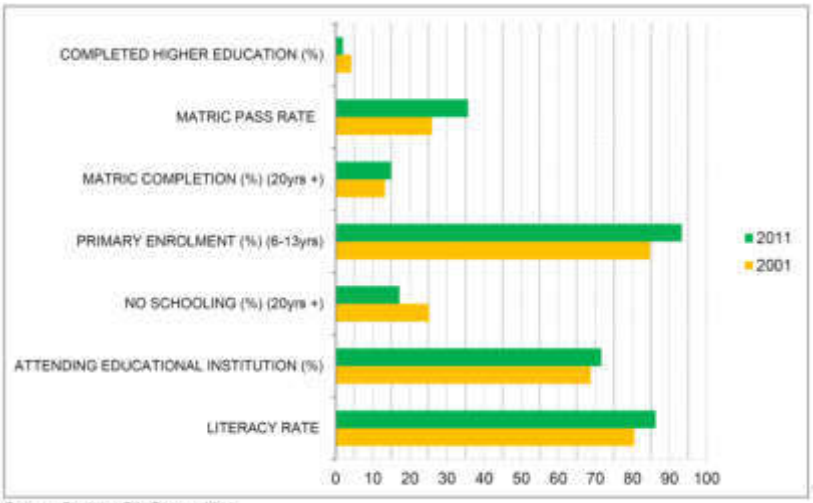
Source: Statistics SA, Census 2011

Figure 11: Education Profile of Population older than 20 years (2011)



Source: Statistics SA, Census 2011

Figure 12: Change in education profile: 2001 to 2011



Source: Statistics SA, Census 2011

Figure 13: Overall change in education profile: 2001 to 2011

Population Distribution:

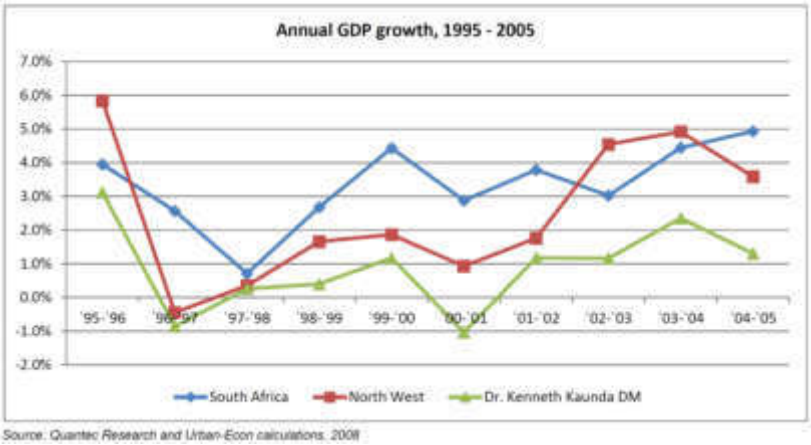
The population density within the Dr. Kenneth Kaunda District has steadily increased since 1995. While the population density was 45 people per square kilometre in 1995, it increased to 47.53 people per square kilometre in 2011.

AREA (Km^2)	14642.23
POPULATION DENSITY (POP/Km^2)	47.53
URBAN FORMAL AREA	630.12
TRADITIONAL AREA	7.19
FARM AREA	14004.95

Source: StatsSA, Census 2011

Economic Performance and Trends:

Annual GDP growth in the DM broadly follows the national trend. DM GDP growth is generally lower than both the national and provincial average. An upward trend in GDP growth rates has been experienced in the DM since 2001.



Source: Quantec Research and Urban-Econ calculations, 2008

Figure 14: Annual GDP Growth Rate; DM

The next graph indicates annual GDP growth rates for the local municipalities within the DM over the period 1995 – 2008. Although data was only available up to 2005, growth rates for the local municipalities were extrapolated to obtain estimates of GDP growth between 2005 and 2008.

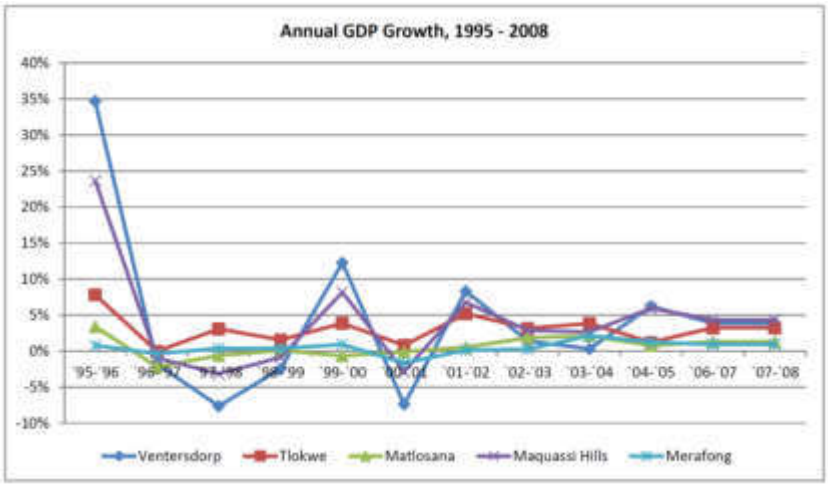


Figure 15: Annual GDP Growth rate, Local Municipalities

- The graph indicates a fairly stagnant economic growth trend within the DM, i.e. the rate of growth has remained fairly constant.
- Negative growth rates were experienced in certain local municipalities in some years, mainly in Ventersdorp and Maquassi Hills.

North West PGDS – General guidelines for growth & investment

a) Focus on diversification of economic base
b) Focus on areas/ industries with coparative advantage and/ or development potential
c) Identification of sills gaps, leading to skills development initiatives
d) Creating and enabling environment for small businesses
e) Public sector interventions should be focused on physical infrastructure and technical support of SMME's
f) Economic growth viewed as prerequisite for achievement of all other policy objectives
g) Growth target for NW: 6.6% per annum
h) Investment target for NW: R6.3 billion per annum
i) Targets are not fixed, but are normative guidelines
j) Growth tartget for Dr. Eknneth Kaunda District municipality: 6.4% per annum
k) Investment goint to DM: 22.17% of NW investment budget
l) Municipalities are encouraged to prepare implementation & business plans in order to access these funds. These plans & project lists must meet certain basic requirements to qualify for approval.

Implication for Dr Kenneth Kaunda Dsitric LED Strategy:

a) GDS must focus on bringing marginalized communities into economic mainstream

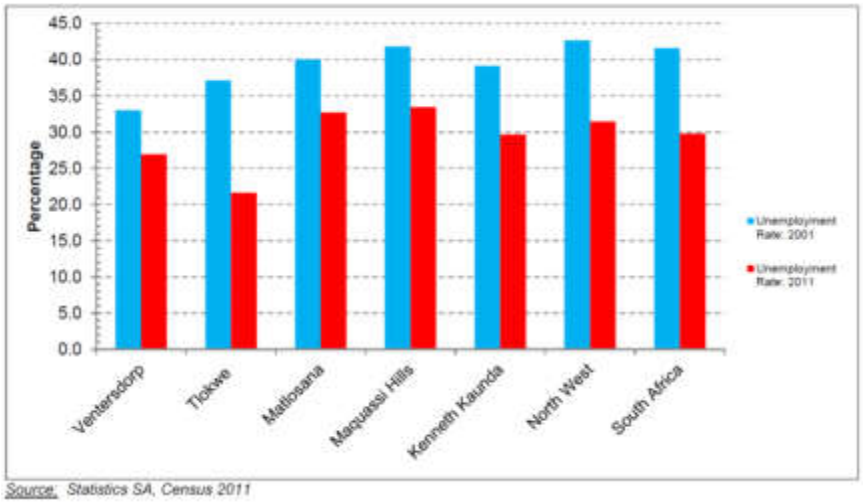
b) Deliberate diversification of the economic base is of prime importance
c) Industries targeted by PGDS incl. Food processing; agro-processing; mining & mineral beneficiation; manufacturing; tourism & cultural industries; transport & communications
d) Transversal objectives: SMME development, skills development and tourism
e) Strengthening and concentration of developments along N12
f) Identification of available land and infrastructure to accommodate development along the corridor
g) Identification of infrastructural backlog that should be addressed.

Employment and labour profiles:

The overall unemployment rate in the Kenneth Kaunda District municipality decreased from 39.1% to 29.7% between 2001 and 2011, representing a notable decrease of 9.5%. This decrease is mainly the result of the performance in the Tlokwe LM where the unemployment rate has decreased by more than 15% from 37.1% to 21.6% and the Matlosana Local Municipality from 40.0% to 32.7% (a decrease of 7.3%). The unemployment rate of the Maquassi Hills LM is 33.4% and that of Ventersdorp LM, 29.7%.

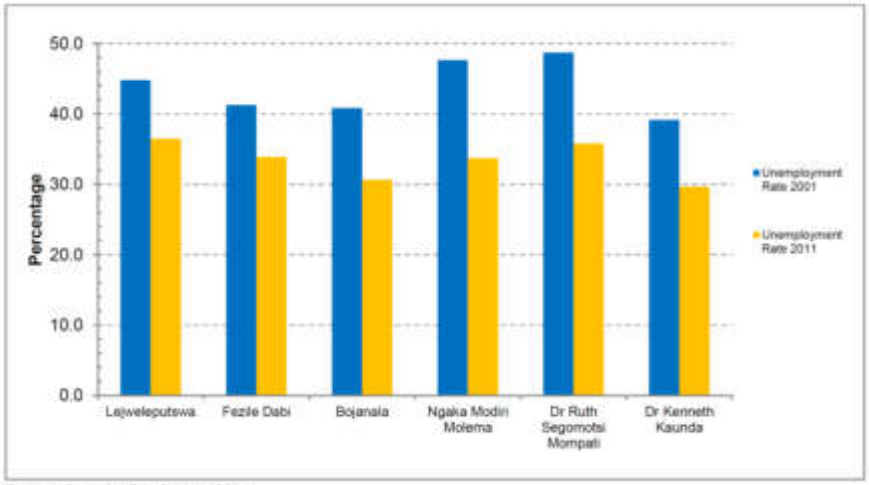
In the broader context of the surrounding district municipalities, the unemployment rate and the rate of decrease in the Dr. Kenneth Kaunda District Municipality is very similar to that of the Bojanala Platinum DM at 29.7 and 30.7% respectively. These rates compare favourably to those of the country (29,8%) and the NW Province (31.5%). The district fares better than the surrounding districts with Lejweleputswa DM and Fezile Dabi DM in the Free State at 33,9 and 36,5% respectively. A notable feature is the persistent higher unemployment rates in the adjacent areas north and west of the Dr. Kenneth Kaunda DM at 33.7% in the Ngaka Modiri Molema DM and 35.8% in Ruth Mompati. This factor may also find expression in the migration figures with the possibility of unemployed economically active population of these two districts relocating to the Dr. Kenneth Kaunda area in pursuit of the possibility of improved economic conditions and finding a source of employment.

The new feature in the Census 2011 is that of youth unemployment, and it points to a higher than average unemployment rate across the country. This factor needs attention in order to put these economically active youth through different types of training in order to gain meaningful employment. The percentage of unemployed youth in the district is 39.2%. The main contributors to this high number are Matlosana at 43.1 and Maquassi Hills at 42.6%. Tlokwe LM and Ventersdorp LM have unemployed youth below the district average of 29.5 and 34.0% respectively. The picture of youth unemployment across the country is bleak at 48.9% and that of the province is just above the district percentage at 40.6. The overall unemployment rate is, however, declining across the district and province.



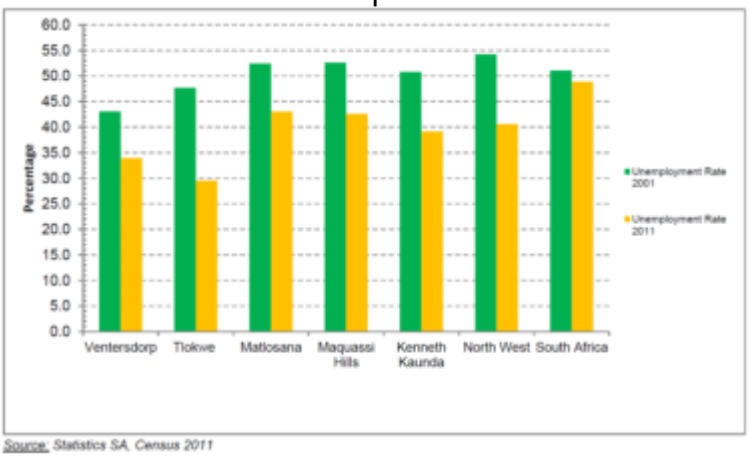
Source: Statistics SA, Census 2011

Figure 16: Unemployment rate for the total population: Kenneth Kaunda DM



Source: Statistics SA, Census 2011

Figure 17: Unemployment rate for the total population: KKDM and surrounding District Municipalities



Source: Statistics SA, Census 2011

Figure 18: Unemployment rate for the total population: Youth of KKDM

The unemployment rate of the district; on average is sitting at 29.7, down from 39.1% in 2001. The comparative male and female unemployment rates for the period 1996 to 2007 are further given in the Dr. Kenneth Kaunda DM 2011 SDF. This information indicates that the decrease in unemployment rate for both the male and female population has been most pronounced in the Tlokwe Local Municipality over the period 2001 to 2007. It again highlights the challenges in the Maquassi Hills Local Municipality exhibiting the highest unemployment rate for both males and females in the district and with the overall unemployment rate increasing over the period 2001 to 2007.

The Dr. Kenneth Kaunda DM LED Strategy adopted in 2008 (which included Merafong LM), provides the following analysis (the analysis is still the highly relevant for the DM);

a) Mining is still by far the most important sector in terms of formal employment.
b) However, there has been a decline in formal employment in this industry over the past decade. This highlights the need for diversification of the economic base.
c) Other important employment sectors: Trade, financial & business services and government services.
d) Data shows a steady increase in the number of people employed in the trade and finance sectors over the past decade.
e) No significant increase in the % of the labour force employed in the manufacturing sector.
f) Percentage (%) employed in manufacturing is small relative to its contribution to GGP, which implies a need for more labour-intensive manufacturing industries.

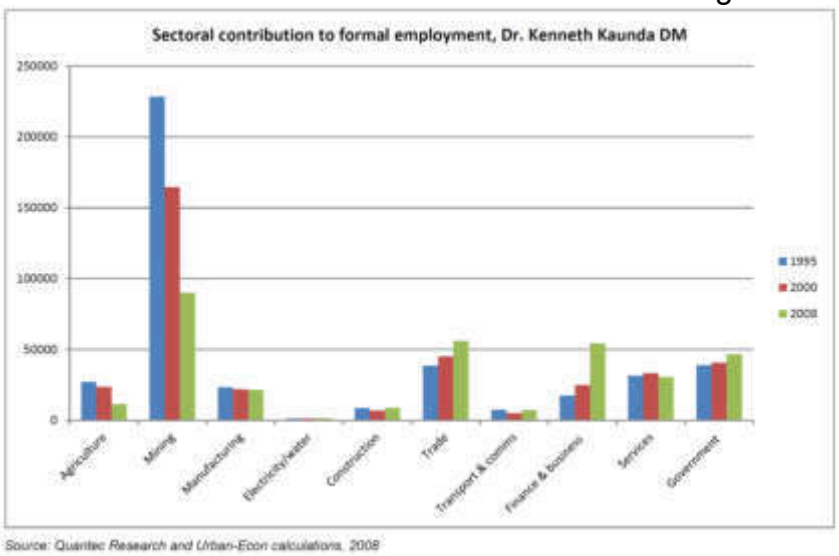


Table 19: Sectorial contribution to formal employment, Dr. Kenneth Kaunda DM

Feasibility Study conducted by EDL Consulting Engineers:

This section was taken from the Feasibility Study conducted by EDL Consulting Engineers; June 2022.

Evaluation of the Study Site

The subject site was investigated; and a qualitative assessment was made; and the site was ranked according to the following descriptions:

Very Poor	Poor	Average	Good	Very Good

- Visibility: Being located on a principle arterial and transient route between two towns namely Potchefstroom and Klerksdorp; with no natural obstructions or topography that impairs the visibility; the site is easy visible to passing traffic from a very good distance away. The visibility can thus be described as **VERY GOOD**;
- Location: The study site is located next to the N12, a principle arterial which feeds traffic to-and from Potchefstroom; Klerksdorp and Stilfontein. There is only a couple of truck stops or filling stations next to the N12 between Potchefstroom and Klerksdorp and therefore the location of the site is considered to be **GOOD**;
- Access: A full access with its associated turning lanes is proposed for the proposed truck stop and filling station; from Kowie Street; but no direct access from the N12. It can hence be concluded that this access layout can be described as **AVERAGE**;
- Trading Market: Considering that this truck stop and filling station relies mainly on heavy vehicle transient traffic travelling long distances between Potchefstroom and Klersdorp as well as from further away places such as Johannesburg or Wolmaransstad along the N12; the trading market is described as **GOOD**;
- Competitor Stations: The nearest existing filling station is situated approx.. 1.5km form the site. There is a total of four (4) filling stations within a 3km radius; including the nearest filling station at approximately 1.5km. A total of twenty-seven (27) existing filling stations are within 10km radius form the site; but with no truck stops. The study site in terms of Competitors can thus be rated as **AVERAGE**;
- Traffic Volumes: The survey indicated high volumes (approximately 20 665vpd) passing the proposed site in all directions; with heavy vehicles being 2821 vehicles per day. The exposure to traffic can thus be described as **GOOD**. (Feasibility Study; EDL Consulting Engineers; March 2022)

Considering the criteria discussed above, it can be concluded that the study site has GOOD trading potential for a truck stop. (Feasibility Study; EDL Consulting Engineers; March 2022)

Impact from competitor sites on the proposed development:

The impact of the competitor stations will be low; mainly due to the competitor sites serving partially different and already established local markets. The impact on all the surveyed sites was found to be between 5% and 10% (most affected sites being Sasol Goudkop) but will be able to recover most of the lost sales within 5 years after the proposed truck stop and filling station is constructed.

It was also found that that future Total Matlosana and Engen Gumtrees will be minimally affected by the proposed Stilfontein Truck Stop and Filling Station. Total Matlosana will not have direct access from the N12 and most of the intercepted traffic will be traffic visiting the Matlosana Mall; therefore the traffic shared with the proposed Stilfontein Truck Stop and Filling station will only consist of a small percentage of the possible intercepted traffic of Total

Matlosana. Engen Gumtrees is situated to the west of the proposed Stilfontein Truck Stop and Filling station with a possibility of having a left-in access from the N12. Eastbound traffic will have a higher interception rate at the Engen than at the proposed Stilfontein Truck Stop and Filling Station if access is more convenient. The eastbound positive traffic (higher interception than westbound negative traffic) will also be passing the Engen before passing the proposed Stilfontein Truck Stop and Filling Station and therefore will intercept more of the traffic travelling eastbound between Klerksdorp and Potchefstroom than the proposed Stilfontein Truck Stop and Filling Station.

Employment Opportunities:
Given the location of the study site and its close proximity to the existing town of Stilfontein; it is expected that the proposed Stilfontein Truck Stop and Filling Station will create at least 35 new job opportunities during its construction phase and will also create a minimum of 25 permanent (long term) job opportunities during the lifespan/ operational phase of the Stilfontein Truck Stop and Filling Station (these include c-store cashiers; admin staff; forecourt fuel attendants etc.)

Stilfontein Truck Stop and Filling Station is situated directly north of the Stilfontein town; and therefore within comfortable walking distance for employees within the town. As per the Concept Site Layout by SCS Architects; a large parking space for a Minibus-taxi/ Bus will be available on the site; and more than sufficient manoeuvring space; to enable the truck stop and filling station employees to travel to and from work by means of public transport; which include Minibus-taxis.

Estimated Sales of Proposed Site:
The following empirical formula is used by the fuel industry to calculate the expected average Litres of fuel to be sold in a month.

$$L = ADT \times F \times p \times d$$

Litres per month (L) = [Vehicles per day passing the site (ADT)]
x
[Average fuel fill per vehicle (F)]
x
[Percentage vehicles of pass-by traffic turning into the site(p)]
x
[Average full normal trading days in a month (d)]

Each of the factors used in the calculation formula for fuel sales shown above; are discussed in the following subsections of this chapter.

2020 Traffic Demand (ADT):

The classified traffic count was conducted on the 12th of November 2020 at the intersection of the N12 and Kowie Street. The traffic volumes were grouped into different traffic streams; as shown below:

- **8 101 Light Vehicles/day (1 388 Heavy Vehicles/day)** eastbound on the N12 past the site (Positive).
- **296 Light Vehicles/day (9 Heavy Vehicles/day)** northbound and southbound on Kowie Street past the site.
- **8 334 Light Vehicles/day (1 416 Heavy Vehicles/day)** westbound on the N12 past the site (Negative).
- **394 Light Vehicles/day (8 Heavy Vehicles/day)** Turning away from the site on N12 / Kowie Street (Local Traffic)
- **719 Taxis/day** Non-diesel vehicles

From the traffic count (mid November 2020), the site is exposed to an ADT of approximately 20 665 veh/day travelling in all directions along the N12 and Kowie Street at the intersection where the Stilfontein Truck Stop and Filling Station is proposed, with an ADTT of 2821 Heavy Vehicles per day passing the site on the N12.

Average Fill:

The average fill at a site varies depending on the type of traffic it is exposed to; with higher fills generally encountered at sites exposed to more transient traffic and lower fills for local traffic. Lower fills can also be expected for sites situated in lower income areas; for older sites and higher fills in more affluent (high income) areas; and new/ modern sites.

In order to get an indication of the average fill in the study area; a survey was conducted at the relevant sites where fill volumes were recorded; and the facilities provided at each station recorded. The survey indicated an average fill at the competitor filling stations of between 9.9 and 46 litres per vehicle. Due to the surrounding area's expected level of income; the other site's average fills measured and the average distances of travel considering that this site will serve transient and local customers; an average fill of approximately 21,0 litres per vehicle (Petrol & <50ppm Diesel) for light vehicles and 140,0 litres per vehicle (50ppm Diesel) for heavy vehicles is deemed appropriate and therefore adopted for the monthly fuel calculations of the subject site.

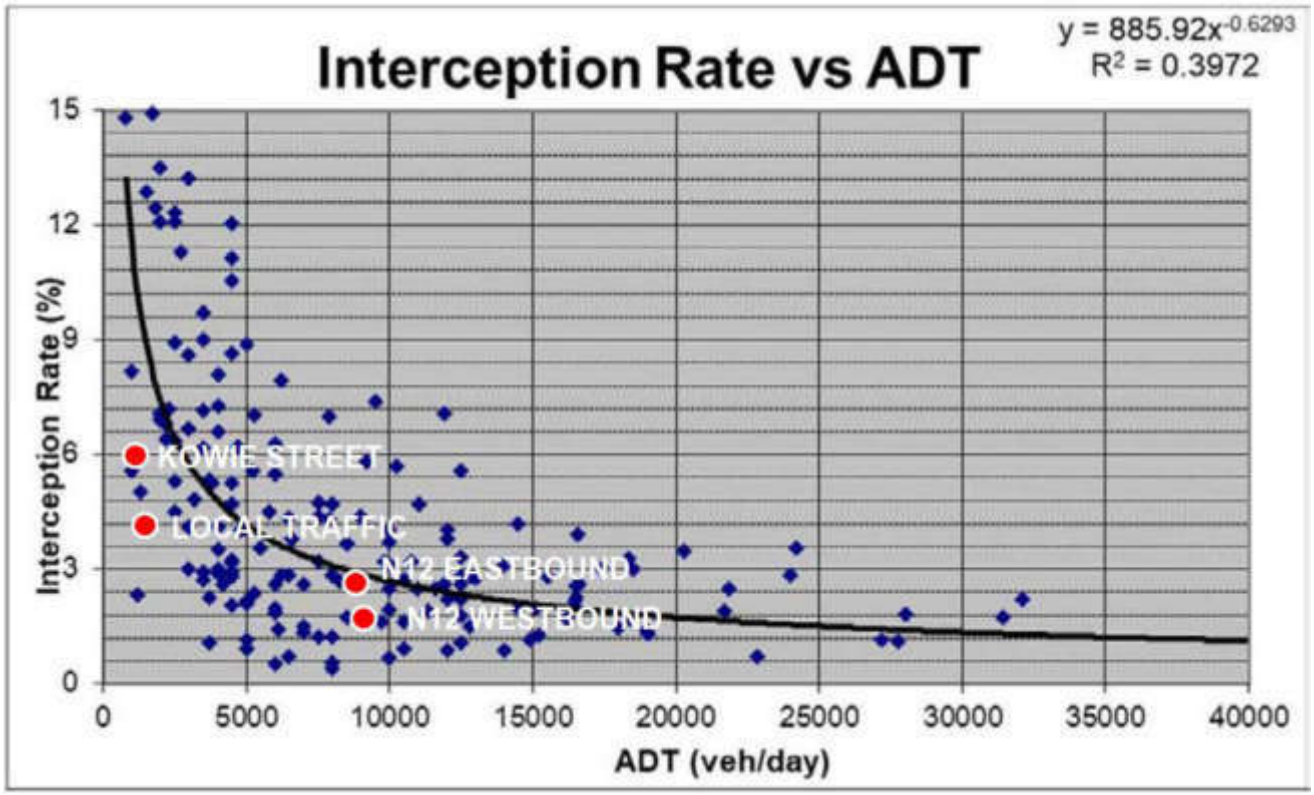
Interception Rates (p):

The turn-in percentages (interception rates) are determined inter alia by the following factors:

- Convenience (clean new facility and easily accessible).
- Visibility (good/long time to decide whether to use the facility or not).
- The amount of passer-by traffic (as per traffic count).
- Type of traffic (transient, commuter or local; income level of the area also a factor).
- Other nearby fuel facilities (distances to competitor sites).
- Service provided to public (car wash, convenience shop, A.T.M. etc).
- Good accesses (proper deceleration and acceleration lanes).
- Location (homebound and work bound and surrounding area).
- Site layout (large enough to provide easy site circulation)
- Fuel Rewards Programs

From previous site surveys and experience with existing and new filling stations and Truck Stop developments; it has been determined that there is a relationship between the interception rate and the passing traffic volumes of a site. This relationship is illustrated by the graph on the next page. The expected interception rates for the prospoed development are also indicated on the graph and tabulated in Table below.

The interception rates for traffic flow on the opposite side (also referred to as a negative traffic) of the road form the Truck Stop and Filling Station is normally lower; as vehicles need to cross oncoming traffic to enter the Filling Station or Truck Stop.



ADT (Petrol & <50ppm Diesel) = 17 844 LIGHT VEH/DAY PASSING THE SITE (EXISTING 2020)		
ROAD AND DIRECTION	TRAFFIC VOLUME (VEH/DAY)	ADOPTED INTERCEPTION RATE
Eastbound on the N12 past the site (Positive Traffic)	8 101	2.5%
Westbound on The N12 past the site (Negative Traffic)	8 334	1.75%
On Kowie Street past the site (Both Directions)	296	6%
N12/ Kowie Street (Local Traffic)	394	4%

Table 5: Expected Interception rates (Petrol & <50ppm diesel)

ADTT (Diesel) = 2 821 HEAVY VEH/DAY PASSING THE SITE (EXISTING 2020)		
ROAD AND DIRECTION	TRAFFIC VOLUME (VEH/DAY)	ADOPTED INTERCEPTION RATE
Eastbound on the N12 past the site (Positive Traffic)	1 388	1.5%
Westbound on The N12 past the site (Negative Traffic)	1 416	0.75%
On Kowie Street past the site (Both Directions)	9	3%
N12/ Kowie Street (Local Traffic)	8	1.5%

Expected Interception Rates (ADTT – Heavy Vehicles – diesel)

As can be seen on the *Interception Rate vs ADT* graph; the interception rates expected for the subject site varies on the N12 and Kowie Street. Lower interception rates are expected from the traffic travelling on the opposite side of the street; which will have to turn across oncoming traffic (negative traffic).

For the proposed Stilfontein Truck Stop and Filling Station; the interception rates for heavy vehicles (500ppm diesel) are lower than for light vehicles at conventional filling stations.

Full trading days in a month:

The definition of full (normal) trading days in a month is the number of typical weekday sales in a month. A typical weekday is a Tuesday; Wednesday; or a Thursday during a week with no school holidays or public holidays. If there was no variation in the traffic; there would have been 30.5 (365/12) full normal trading days in a month. If; for example; the weekend traffic demand is lower than during the week; the full normal trading days in a month becomes less. It is thus wrong to assume that a default value of 30.5 days should be used since a 24-hour facility will be operated each day of the month.

Traffic patterns in a study area; largely determine the number of trading days per month. For filling stations and Truck Stops situated in an area that is mainly exposed to commuter traffic; 26 full trading days in a month can be expected. However; for the customers will be from the transient market group (N12); as mentioned; but also has some commuter and local traffic. It is therefore expected that **28 trading days** per month is appropriate for the passing traffic and was therefore assumed for the proposed Truck Stop and Filling Station.

Expected Monthly Sales:

For new deelopments a general guideline is used when estimating fuel sales for future years. It is commonly found that the full potential of a filling station's or Truck Stop's fuel sales is not

reached during the first year of operation. Only during the third year the full (100%) potential is normally reached.

In-depth calculations for petrol sales were not conducted for this study. The average fills on diesel is more than that of petrol; but the profit per litre is lower. TI was assumed that the proposed Stilfotnein Truck Stop and Filling Station will sell diesel only (Trucks) and the Filling Station will sell petrol and diesel fuels. There are usually also other competitors that already cater for the diesel market; by offering reward programs and discounts as well as 30-day accounts.

For the purpose of this study and considering the traffic count done in November of 2020; it was estimated that diesel transactions will account less than half of the monthly fuel sales. A summary of the estimated fuel sales is presented in the table below.

STILFONTEIN EXTENTION 7

MONTHLY SALES POTENTIAL	LIGHT VEHICLES			
MOVEMENT	Kowie Street	N12		
	NORTH / SOUTH	EASTBOUND	WESTBOUND	LOCAL
Traffic Flow (Vehicles per Day)	296	8,101	8,334	394
Average Fill (Litres per Day)	21.0	21.0	21.0	21.0
Trading Days (Days per Month)	28	28	28	28
Interception Rate (%)	6.00%	2.50%	1.75%	4.00%
SUB-TOTAL	**10,443**	**119,085**	**85,757**	**9,267**
SALES POTENTIAL	**10,443**	**204,842**		**9,267**
				224,551

MONTHLY SALES POTENTIAL	HEAVY VEHICLES			
MOVEMENT	Kowie Street	N12		
	NORTH / SOUTH	EASTBOUND	WESTBOUND	LOCAL
Traffic Flow (Vehicles per Day)	9	1,388	1,416	8
Average Fill (Litres per Day)	140.0	140.0	140.0	140.0
Trading Days (Days per Month)	28	28	28	28
Interception Rate (%)	3.00%	1.50%	0.75%	1.50%
SUB-TOTAL	**1,058**	**81,614**	**41,630**	**470**
SALES POTENTIAL	**1,058**	**123,245**		**470**
				124,774

ANNUAL FORECAST - LIGHT VEHICLES MONTHLY SALES POTENTIAL (Petrol & <50ppm)							
PERIOD		POTENTIAL GROWTH		ESTIMATED LITRES		TOTAL	
YEAR		Percentage of Potential	Growth Rate	Petrol	Diesel (50ppm)	LITRES PER MONTH	
1	2022	90%	2.50%	-	207,149	**207,149**	
2	2023	95%	2.50%	-	224,123	**224,123**	
3	2024	100%	2.50%	-	241,817	**241,817**	

ANNUAL FORECAST - HEAVY VEHICLES MONTHLY SALES POTENTIAL (Diesel)							
PERIOD		POTENTIAL GROWTH		ESTIMATED LITRES		TOTAL	
YEAR		Percentage of Potential	Growth Rate	Petrol	Diesel	LITRES PER MONTH	
1	2022	90%	2.50%	-	115,104	**115,104**	
2	2023	95%	2.50%	-	124,536	**124,536**	
3	2024	100%	2.50%	-	134,368	**134,368**	

ANNUAL FORECAST - ALL VEHICLES MONTHLY SALES POTENTIAL							
PERIOD		POTENTIAL GROWTH		ESTIMATED LITRES		TOTAL	
YEAR		Percentage of Potential	Growth Rate	Petrol	Diesel	LITRES PER MONTH	
1	2022	90%	2.50%	-	322,252	**322,252**	
2	2023	95%	2.50%	-	348,659	**348,659**	
3	2024	100%	2.50%	-	376,185	**376,185**	

Major fuel companies generally regard a new urban site feasible if the fuel sales volume forecast indicates that more than 300 000 litres of fuel will be sold per month. For rural sites; the fuel sales threshold is usually lower and can be as low as 200,000 L/month; depending on the development costs and strategic locations. Considering the expected fuel sales tabulated above to be just over 376 000 litres in the 3rd year of operations; it can be concluded that the proposed site will be feasible for the development of a Truck Stop and Filling Station for all the larger fuel companies; (such as SASOL; TOTAL; ENGEN; BP; SHELL; etc); and will also be considered feasible by all of the smaller fuel companies (such as Q4; VIVA; PUMA and MBT Petroleum) at the intersection of the N12 and Kowie Street; Stilfontein x 7.

Feasibility of the Proposed Site:

We have previously consulted with Truck Stop and Filling Station developers and considered several new Truck Stops and Filling Stations development cases for minimum monthly fuel sales thresholds and for development costs. The table below provides a summary of the

typical costs associated with a new; modern Truck Stop and Filling Station development located on a site similar to the proposed Stilfontein Truck Stop and Filling Station.

COST ITEM	COST	COST
1. ZONED PROPERTY		R 5 250 000.00
1.1 Rights, EIA, Licenses, etc.	R 900 000.00	
1.2 Land Cost	R 3 500 000.00	
1.3 Developer Profit	R 500 000.00	
1.4 Bulk Service Contribution	R 350 000.00	
2. CIVIL ENGINEERING CONTRACT		R 6 700 000.00
2.1 Access (External Roads)	R 1 300 000.00	
2.2 Internal Roads and parking area (incl. paving & kerbs)	R 4 500 000.00	
2.3 Earthworks	R 750 000.00	
2.4 Services	R 150 000.00	
3. BUILDER'S CONTRACT		R 4 1770 000.00
3.1 Building	R 1 500 000.00	
3.2 Canopies (x2)	R 1 700 000.00	
3.3 Signage	R 140 000.00	
3.4 Shop Fitting	R 350 000.00	
3.5 Computer & CCTV System	R 230 000.00	
3.6 Generator	R 250 000.00	
4. OTHER		R 1 850 000.00
4.1 Franchise Fee	R 250 000.00	
4.2 Professional Fees	R 1 350 000.00	
4.3 Gardens, Irrigation and Fencing	R 250 000.00	
TOTAL		±R 17 970 000.00

The cost variation of a Truck Stop and Filling Station combination development is largely influenced by the cost of the zoned property; the size of the site and the civil engineering works (mainly the cost of the earthworks; parking areas and accesses. Major fuel companies generally regard an urban site feasible if the projected fuel sales (for a normal/ average size facility) are in the region of 300 000 litres per month; depending on several factors. For Truck stops the threshold vary widely dependent monthly on input costs.

Given the expected fuel sales in year 3, 376 000 litres per month; it can be concluded that the proposed Truck Stop and Filling Station will be feasible for the fuel companies.

Conclusion:
The expected fuel sales for the proposed Filling Station and Truck Stop's third year of operation; is just over **376 000 litres per month**.

The proposed site will have an initial negative impact (Loss of Fuel Sales of between 5% and 10%) on five (5) existing competitor sites; within the study area; and although other sites do exist further away from the site; they were not deemed Competitors; considering the different local markets and traffic streams catered for; by each of the exiting filling stations; as well as the distances away from the proposed Truck Stop and Filling Station. The impact should not irreparably jeopardize these businesses and with the positive traffic growth in the area; will be able to recover within 3-4years of the new Truck Stop and Filling Station being implemented.

The General conclusion made in the Feasibility Study confirmed that the major fuel companies vary in their threshold requirements for a new site feasibility; and in rural areas the threshold is lower than in urban areas; with the lower threshold for rural sites from as low as 200,000L and for urban sites, normally 3000,000L per month. Regarding the proposed site (which is opposite Stilfontein residential area and at the intersection of the N12 and Kowie Street; which is an urban environment with passing traffic over 20 665 vehicles per day) the monthly fuel sales volumes as summarized above is estimated at just over 376 000 litres per month by the 3rd year of operation; therefore the propped Truck Stop and Filling Station site will be feasible for the fuel companies. (Feasibility Study; EDL Consulting Engineers; March 2022)

Considering the expected fuel sales tabulated above, it can be concluded from a feasibility point of view that the proposed site will indeed **be feasible** for the development of a Truck Stop and Filling Station located next to the N12, with a full access from Kowie Street. (Feasibility Study; EDL Consulting Engineers; March 2022)

Need and Desirability in general:
The developer identified a need for a Truck Stop and Filling Station along the N12. There are not many Truck Stops along the N12 Highway that provides proper facilities for heavy vehicles within proper illuminated parking areas with 24 hour surveillance that are securely fenced that prove a safe area for the truck drivers; their trucks and cargo. This facility will offer a safe area which will increase the comfort level of the drivers and severely reduce the road fatigue and the driver's attitude on the road. This will also reduce accidents on the roads and highway as the heavy vehicles will rather stop at this proper facility than turning off the road to sleep alongside the road whilst also obstructing vehicles on the roads. This facility will furthermore allow the truck drivers to freshen up and get something to eat and drink at the convenience store and restaurants as well as utilizing the medical room "clinic" that will treat any minor ailments i.e. headaches; plasters etc. The secure and surveillance at the parking area will also furthermore reduce access for unwanted trespassers. Possible spin-offs will be generated to other related activities to the benefit of numerous job opportunities that will be created for the local work force during the construction and operational phase of the project

as well as economic activities and related services. The filling station could also be convenient for the workers and parents of the Schools situated at the Spirit Word Ministries. During the Public Participation a few of the workers mentioned that it will be beneficial and convenient if they can fill up at this facility. The location of the site is regarded as being ideal for purposes of the proposed development. In order to determine the need and desirability one will consider factors like the visibility; location; access; trading market; competitor stations; traffic volumes; employment opportunities; economic factors; socio factors etc. The site was found to have good trading potential in terms of the factors mentioned as per the findings of the Feasibility Study.

10. SERVICES:

9.1 Water

The City of Matlosana Local Municipality comment in their letter dated 20 July 2022 that water services are available for use i.e. nearby pumping 700mm bulk line or the water network within Stilfontein area. Preferably it will be advisable to connect to the water network within Stilfontein (150mm diameter) as it will have water at all the time which will be at the cost of the developer.

According to the Services Report conducted by Gant Project Managers (Pty) Ltd during July 2022 the site being located to the North of the N12 means that service connections will need to be located on the Southern side of the site. The existing services nearest to the site provides water to the residential area in Stilfontein. The intention is to connect to the water system; through an existing pipe that crosses the N12; thereby bypassing the need to pipe jack. The pressure of the line will be confirmed by the municipality.

Figure 20: Proposed water connection

The total pipeline lengths to be installed are:

- HDPE 75 Ø mm = 156 m (Portable Water)
- HDPE 110 Ø mm = 501 m (Fire Water)
- HDPE 160 Ø mm = 99 m (Main Connection Line)

  Total Pipe Length = 756 m

The water demand was calculated according to the guidelines for Human Settlement Planning and Design. The expected average daily flow for a special zone is 400 litres per day per 100m² of erf size being used. The expected average daily flow is 8 188kl per day. The design flow is determined from the following parameters:

- Water demand:
  - Government and Municipal – demand per 100m² of gross floor area
    - 400 l/unit/day (as per Guidelines for Human Settlement Planning and Design Table 9.14)
    - Gross floor area to be developed is 1286.03 m²
      - Equivalent 100 m² units = 11.6
      - 11.6 x 400 = 4 640 l/day
      - 4 640 l/day = 0.053 l/s
    - Peak Factor = 4
      - 0.053 x 4 = 0.215 l/s

9.2 Fire Fighting:

A fire risk assessment will have to be carried out by a specialist along with a suitable reticulation for the approval of the local authority for a zoning specifically assigned for the development to comply with SANS 10400 and SANS 090. Pressure test will need to be undertaken at the time of the detail design to confirm the pressure in the system and if a booster will be required. One connection will be used to supply portable and fire water. As such; a storage tank for fire fighting will need to be installed. The following design criteria is to be noted for Moderate Risk Level 1 for Industrial; Business and High-Rise Flats:

Fire Water Risk Category	Moderate Risk
Total Fire Flow	50ℓ/s
Flow at Hydrants	25ℓ/s
Minimum Pressure at Fire	15m
Min Residual Pressure of Rest of System during fire	5m
Maximum Hydrant Spacing	180m
Fire Hydrants doubling as Scour Valves	Yes
Duration of Design Fire:	4 hr.

The municipality will have to ensure that suitable flow is available at the connection point. The fire and water network will be separated to ensure efficiency for each function.(Stormwater Services; Civil Engineering Services; Gant Project Management (Pty) Ltd), March 2022).

9.3 Sanitation/ Sewer

The City of Matlosana Municipality confirmed in their letter dated 20 July 2022 that there are no existing services on the site. An option of septic tank on site or small package plant would be better. There is an existing network within Stilfontein area; these will require pipe jacking across the N12 to connect to the existing manholes within the network. The developer must at own cost install a 160mm diameter sewer network for the new development in order to provide each erf with sewer connection.

According to the Services Report there are no municipal sewer services to the North of the N12. All the sewer is located to the south. As per the figure below there is a manhole that would be suitable as an option to connect sewer drainage.

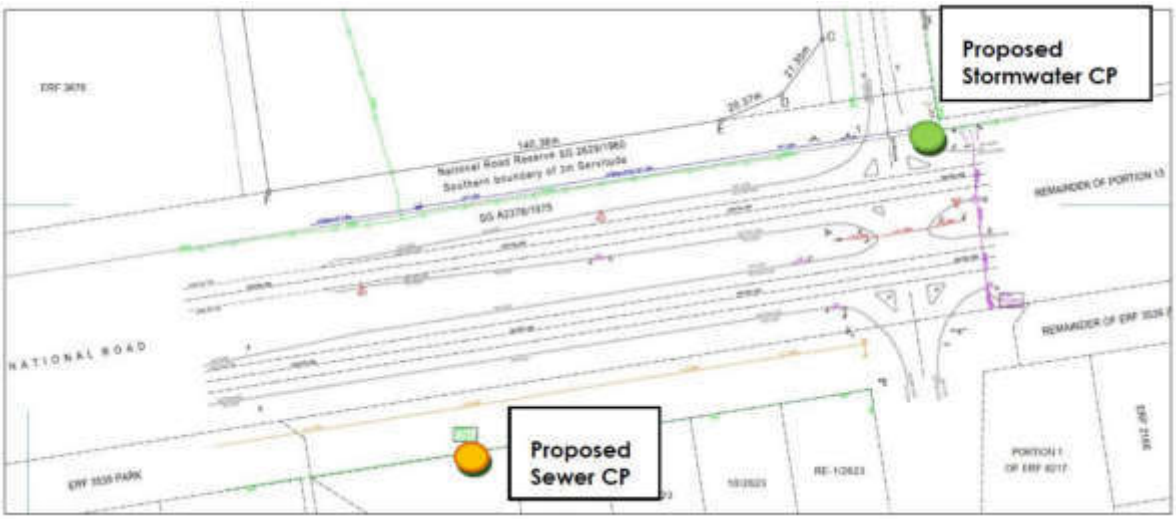


Figure 21a: Proposed Sewer connection

Additionally; the figure below shows an additional connection point that may be suitable. Both connection points are located to the south of the development as such will need to cross the N12 to ensure that they connect. The proposed connection point shown in the figure below was discussed with the municipality as an option; however the issue of capacity has been brought up. An additional option to include a Septic tank will also be evaluated in this report.

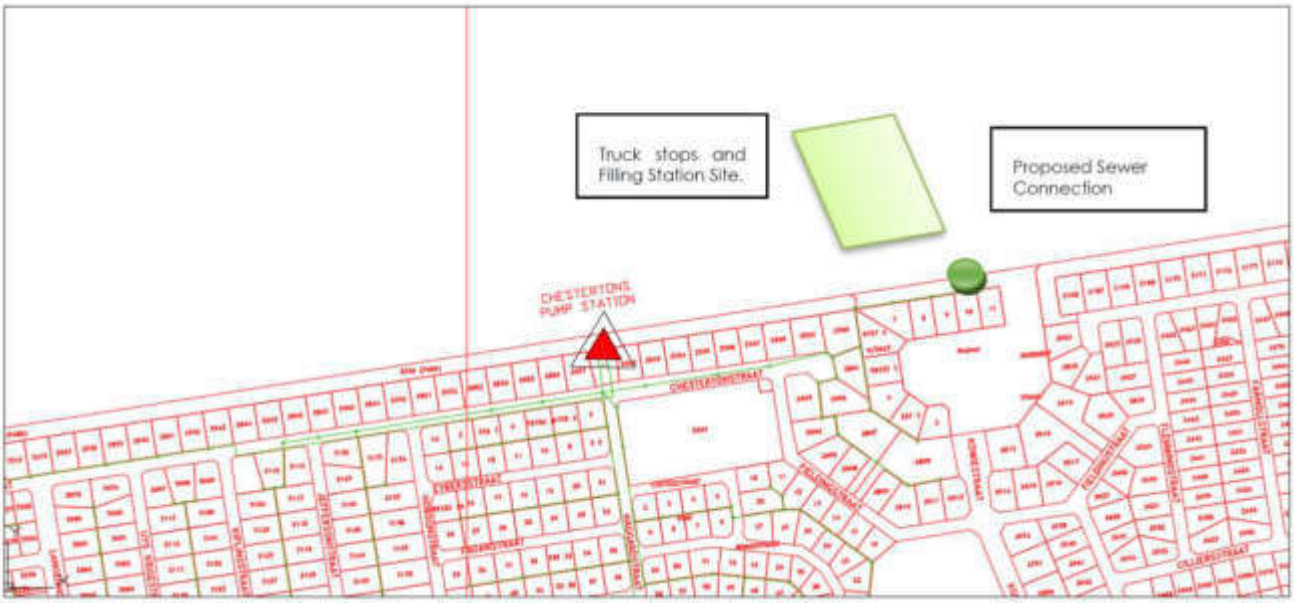


Figure 21b: Proposed sewer connection

Sewage calculation:
Government and Municipal – demand per 100m² of gross floor area; 400ℓ/unit/day (as per Guidelines)

- Gross floor area to be developed is 2047 m²
- Equivalent 100 m2 units = 20.47
- 20.47 x 400 = 8 188 l/day
- 8 188 l/day = 0.0948 l/s
- Allow for extraneous flow = 30%
- Peak Factor = 2.5
- 0.0948 x 1.3 x 2.5 = 0.308 l/s

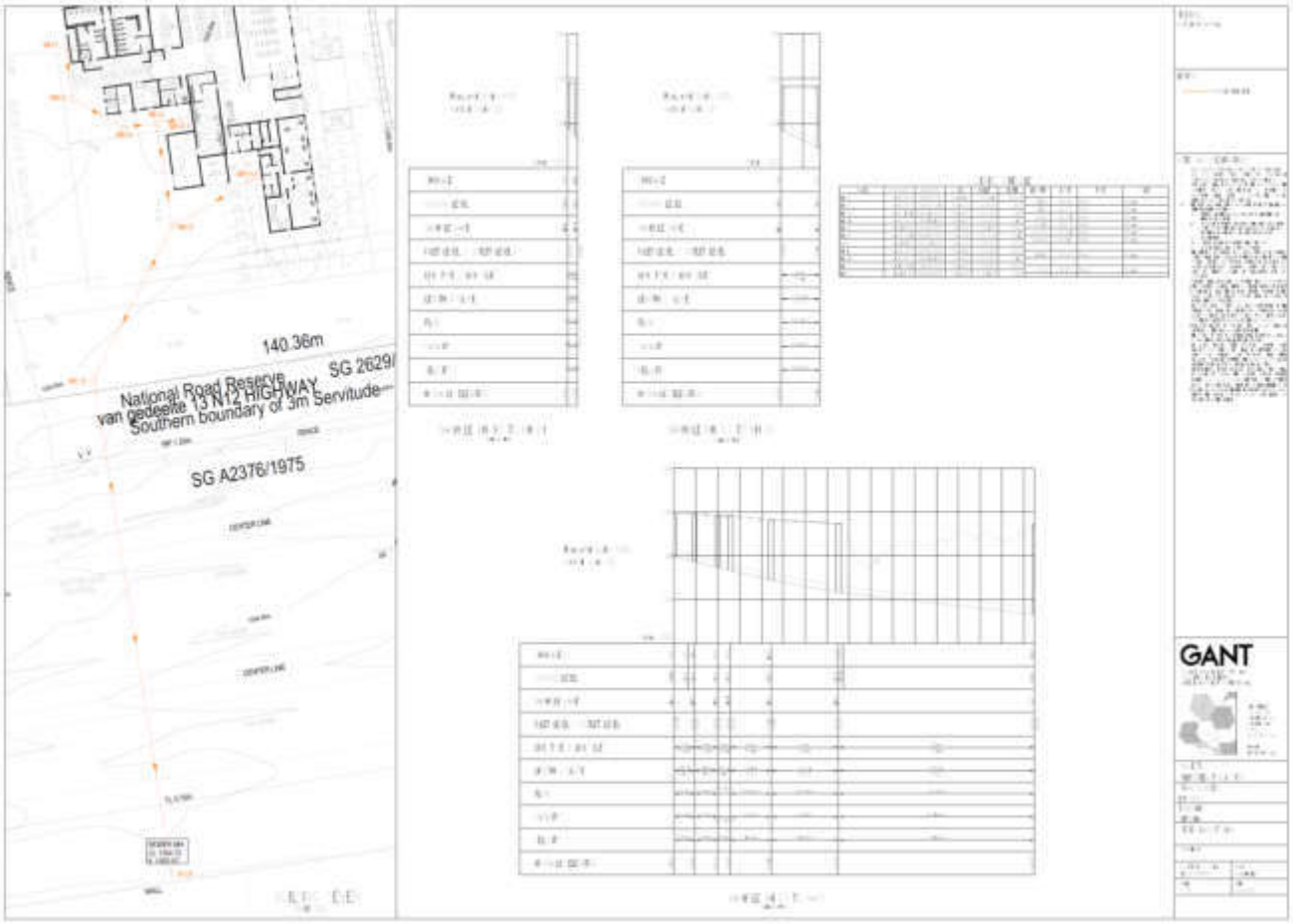


Figure 22: Sewer drawings

The Engineers investigated both options for the sewer as suggested by the Municipality. The options are discussed below.

Piped Option 1:

The first option that would result to minimal maintenance is the management of sewerage through a piped system. As previously mentioned; there are no services to the North of the N12. The nearest connection point is to the South and is shown in the Sewerage layout plan.

In order to connect to that point; the sewer line is to be piped jacked under the N12. Piping to be 160mm HDPE in line with SABS 10252-2.

Sewage calculation:
Government and Municipal – demand per 100m² of gross floor area. 400ℓ

- Gross floor area to be developed is 2047 m²
- Equivalent 100 m2 units = 20.47
- 20.47 x 400 = 8 188 l/day
- 8 188 l/day = 0.0948 l/s
- Allow for extraneous flow = 30%
- Peak Factor = 2.5
- 0.0948 x 1.3 x 2.5 = 0.308 l/s

Septic Tank – Option 2:
The option of a Septic Tank is introduced as the current municipal line may not have capacity. The septic tank would be managed and maintained by the client. The septic tank has been designed in line with the Waterborne Sanitation Design Guide and Sans 10252-2. The tank capacity has to be design to accommodate at least 3 times the estimated average daily flow. The estimated daily flow is 8 188ℓ/day. The system should be able to accommodate 24 564ℓ. Tank capacity is therefore 24.56m³. The Waterborne Sanitation Design Guide indicates that a good design would include:

- A liquid depth of between 1.0m and 1.8m.
- Rectangular shape with length three times the width.
- The first compartment should be twice the volume of the second compartment.

From the above it can be noted that the tank dimensions would be:

- Height/ Depth: 2.1m
- Width: 2.1m
- Length: 6.3m
  Total Volume: 27.78m³

The tank is to be reinforced Concrete designed for minimum width with appropriate lining and protection to the satisfaction of the Geotechnical Engineer as well as the Environmentalist. An example of a 25m³ Septic tank is inserted below.

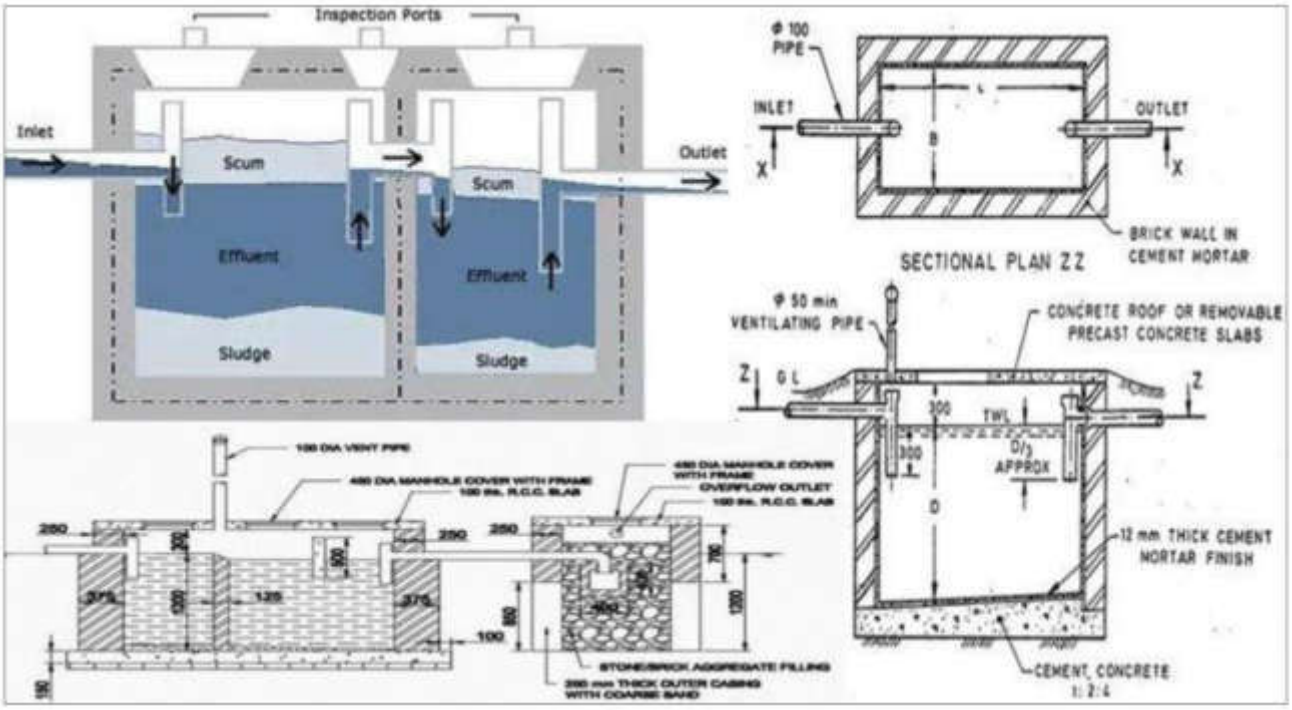


Figure 23: Typical example of a Septic Tank to be constructed.

9.4 Electricity

Eskom will be the service provider for electricity to the site. Eskom and the applicant; Lesedi La Ka Trading and Projects CC had a meeting early during 2022 regarding the provision of electricity and Eskom confirmed in this meeting that they will be able to supply electricity to the site. Following the meeting a quote was obtained from Eskom on 14 January 2022. The quote state that a new application for a 25kVA/40Amp per phase will be considered. Service agreements are therefore in the process of being formalized.

After this letter the applicant had another meeting along with the Electrical Engineer for the project.

Eskom provided a letter dated 29 June 2022 stating that they will have capacity on the feeder to connect a new 315kVA transformer. The feeder voltage is 6.6kV and we do not have such transformers. Our standard transformers are 11kV and 22kV. We are in the process of testing the market and communicating with the manufactures to determine if we can procure a transformer for your specific application.

9.5 Stormwater

According to the Services Report the network is designed to limit the runoff into the site as well as minimize the surface runoff in the site. Due to the flat topography as well as the absence of services, the water is to be managed through surface as well as a pipe system.

Material will be required as fill to ensure drainage slopes can be achieved. Please refer to the map below for the stormwater.

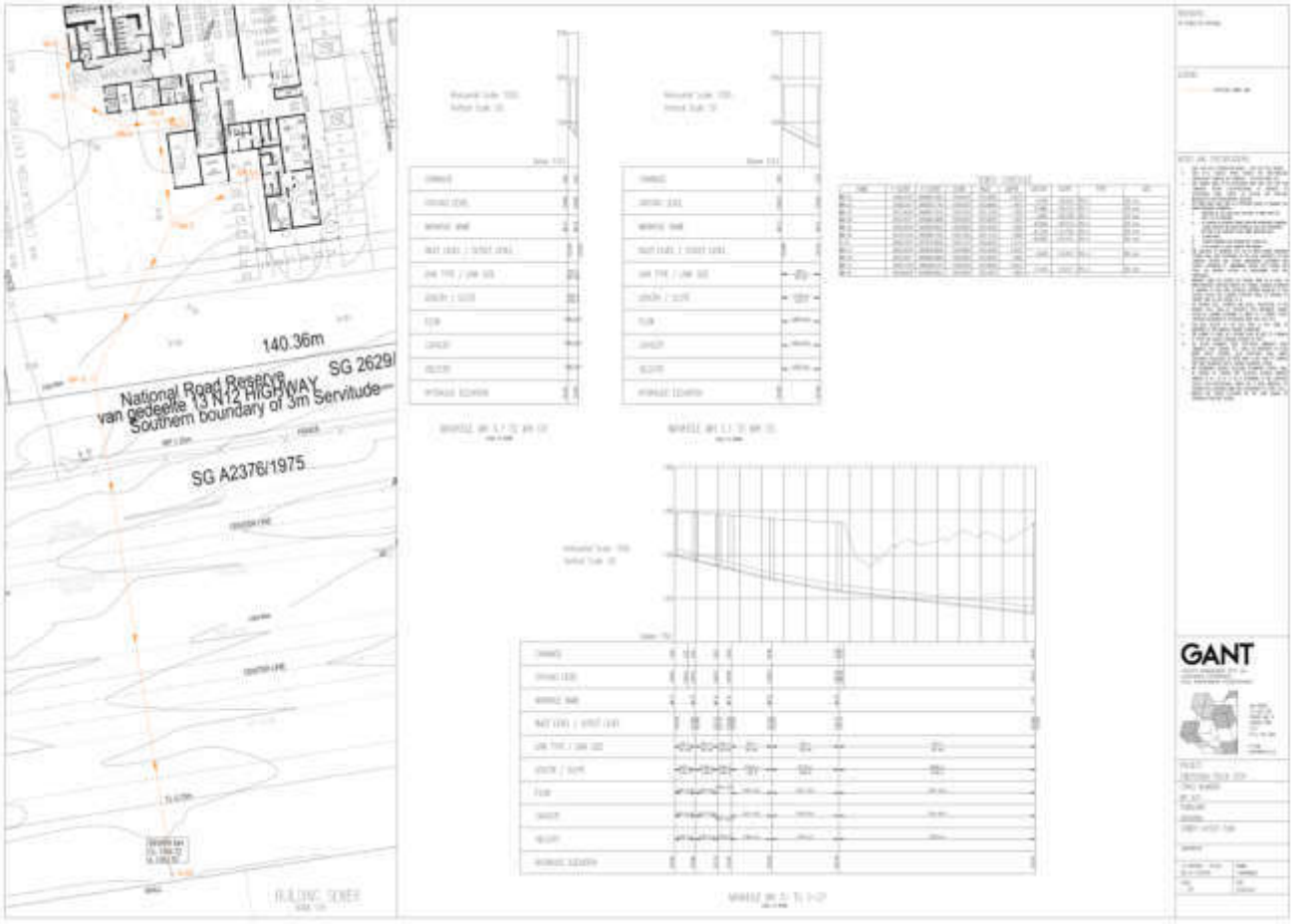


Figure 24: Stormwater drawings

Existing services:

There is no evidence of existing stormwater systems on the site. There exist a borrow pit to the southeast that will not be used for stormwater drainage. The site will be filled with G7 material (Natural Gravel), to ensure suitable drainage slopes. The figure below shows the location of the pond and the direction of run off for the Truck Stop and Filling Station. The stormwater will be managed through surface runoff; channels; and stormwater pipes. The site will manage runoff to a Field Inlet where it will drain into a pipe. There is a connection point just east of Kowie Street; where the proposed pipeline will connect to.

Figure 25: direction of runoff

The total pipe length for the Stormwater system is noted as:

- 450 Ø mm = 11 m
- 450 Ø mm = 53 m

Total = 64 m

Flow calculations:

The Rational Method (Alternative 3) from the Drainage Manual was used for the calculation of the runoff as the site area is less than 15km².

$$Tc = 0.604\left(\frac{rL}{\sqrt{Sav}}\right)^{0.467}$$ Equation 1: Time of Concentration for Overland Flow

$$Q = \frac{CIA}{3.6}$$ *Equation 2: Peak Flow*

The Stormwater Runoff for Return Periods is indicated in the table below.

Return Period:	1:5 year	1:25 Year	1: 50 Year
Peak Flow (Pre-Development): (m^3/s)	0.060	0.123	0.145
Peak Flow (Post-Development): (m^3/s)	0.341	0.700	0.827

In preparing the stormwater report the Geotechnical investigation and the dolomite stability assessment was considered along with the SANS 1936 (2012). The stormwater will therefore be in line with SANS 1936/1 (2012).

The following should be considered as part of the stormwater management:

- All stormwater pipes to be laid at a minimum slope of 1:150.
- Grid inlets or drainage to be provided by brick/ concrete walls.
- All water from gutters and rainwater down pipes should be channelled away from the building into a stormwater drainage or grassed area away from any buildings.
- The system should be designed to be watertight. Lined surface channels area therefore preferred.
- No ponding of surface areas is permitted.
- All water system materials will be of HDPE quality materials and with flexible joints to be used.
- No plumbing and drainage pipes shall be placed under the floor slabs.
- Stormwater system will be designed to ensure ease of maintenance from time to time as recommended.
- It should be noted that the Geotechnical Report indicates that no groundwater was experienced during the investigation. Additionally, the groundwater is estimated to be 25m below natural ground level.

9.6 Domestic waste

Domestic waste will be collected by the local municipality on a weekly basis or twice in a week as per the letter from City of Matlosana Local Municipality dated 20 July 2022. There is an existing landfill site that accommodate the domestic waste but any hazardous waste will be done by the developer cost and use of private services to dispose hazardous waste.

9.7 Traffic

According to the Traffic Impact Study the development controls are:
Zoning: “Special” for Public Garage; Drive-in Restaurant; Shops and Service Enterprises.
Site area: +-2.3ha
FAR: 0.1

The following is planned on the study site:

AREA SCHEDULE	
STAND AREA	- 4.4245 ha
FORECOURT	- 530.00 m²
TRUCKWASH	- 300.00 m²
GUARD HOUSE	- 89.00 m²
SHOP	- 200.00 m²
COV WALKWAY	- 300.00 m²
RESTAURANT	- 200.00 m²
ABLUTIONS	- 153.00 m²
LAUNDROMAT	- 25.00 m²
PAY OFFICE	- 25.00 m²
SHOP/KITCHEN OFFICE	- 25.00 m²
CLINIC/LOCKER & STORE	- 25.00 m²
KITCHEN	- 75.00 m²
BULK STORE	- 50.00 m²
GENERATOR & AIR COMP.	- 25.00 m²
LEASABLE EXTERNAL OFFICES	- 100.00 m²
WALKWAYS AND LOBBYS	- 225.00 m²
SUB TOTAL	- 1428.00 m²
GRAND TOTAL	- 2347.00 m²

The proposed Site Development Plan makes provision for 26 parking spaces for normal vehicles and 62 parking spaces for trucks.

A filling station is not regarded as a trip generator; only a trip attractor and there are no trip generation rates for a filling station in the South African Trip Data Manual. There are also no trip generation rates available for a Truck Stop in the SA Trip Data Manual. In general, truck stops are used as an overnight facility with minimal movement of trucks during the peak traffic hours.

The interception rates used in the feasibility study will also be used for peak hour trip generation purposes in the traffic impact assessment. The interception rates used are presented in the table below.

Peak hour	Interception rate Light vehicles (%)	Interception rate Heavy Vehicles (%)
N12 east bound	2.5	1.5
N12 west bound	1.75	0.75
Kowie Street past site	6	3
Kowie Street local traffic	4	1.5

The expected weekday morning and afternoon peak hour trip generation based on the interception rates are presented in the table below.

Peak hour	Peak hour volume	Directional Split (in/out)	Expected peak hour trips	New Trips In	New Trips Out
N12 eastbound					
Morning (a.m.)	512	50:50	13	7	6
Trucks	43	50:50	1	1	0
Afternoon (p.m.)	693	50:50	17	9	8
Trucks	16	50:50	0	0	0
N12 Westbound					
Morning (a.m.)	639		11	6	5
Trucks	21		0	0	0
Afternoon (p.m.)	635		11	5	6
Trucks	35		0	0	0
Kowie Street local					
Morning (a.m.)	232		9	4	5
Trucks	0		0	0	0
Afternoon (p.m.)	293		11	5	6
Trucks	0		0	0	0

The results of the capacity analysis indicate that the expected traffic demand can be accommodated at the existing intersection with a stage crossing.

The intersection design was based on the swept path of a WB67 Interstate Semi-trailer (22.1m long) with a turning radius of 28.22m kerb to kerb. Lane widening are required on certain lanes to accommodate the design truck swept-path.

The proposed development is supported from a traffic flow point of view. It is further recommended that:

- Access is obtained off the extension of Kowie Street as depicted in the figure below.

Figure 4: Conceptual access layout

- No direct access will be allowed off the N12 and no access will be allowed within 100m from the road reserve of the N12.

- The following is proposed for the access off Kowie Street:
  Inbound lane: 6m
  Outbound lane: 6m
  Stacking length: 25m from the road reserve of Kowie Street
  Separate left turn on Kowie Street at the access

- The following road upgrades are proposed:
  - Intersection: N12 and Kowie Street
    - Widen left-slip lane approach on N12 western approach from 3.0m to 4.0m
    - Widen auxiliary lane for right-turn vehicles from Kowie Street northern

approach from 3.0m to 4.0m
- ❖ Widen right-turn lane on N12 eastern approach from 3.0m to 4.0m
- ❖ Widen auxiliary lane for left-turn vehicles from Kowie Street northern approach from 4.0m to 5.0m

➢ Kowie Street
- ❖ Kowie Street from the N12 to the access of the truck stop needs to be upgraded to accommodate the increased trucks traffic volumes.

- The splay at the opposite corner of Kowie Street and the N12 appear not to be in place based on the boundary fence. This needs to be verified to accommodate the road widening for the design truck swept-path.

11 DESCRIPTION OF RECEIVING ENVIRONMENT:

a. Gradient of the site:

Flat	~~1:50 – 1:20~~	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

b. Location in Landscape:

~~Ridgeline~~	~~Plateau~~	~~Side slope of hill/ridge~~	~~Valley~~	**Plain**	~~Undulating plain/low hills~~	~~River front~~

c. Groundwater; Soil and Geological Stability of the site:

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

Shallow water table (less than 1.5m deep)		**NO**
Dolomite, sinkhole or doline areas	**YES**	
Seasonally wet soils (often close to water bodies)	**YES**	
Unstable rocky slopes or steep slopes with loose soil		**NO**
Dispersive soils (soils that dissolve in water)		**NO**
Soils with high clay content (clay fraction more than 40%)		**NO**
Any other unstable soil or geological feature		**NO**
An area sensitive to erosion		**NO**

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

b) are any caves located on the site(s)	~~YES~~	**NO**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): **Longitude (E):**

[redacted]

c) are any caves located within a 300m radius of the site(s)	~~YES~~	**NO**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): **Longitude (E):**

[redacted]

d) are any sinkholes located within a 300m radius of the site(s)	~~YES~~	**NO**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): **Longitude (E):**

[redacted]

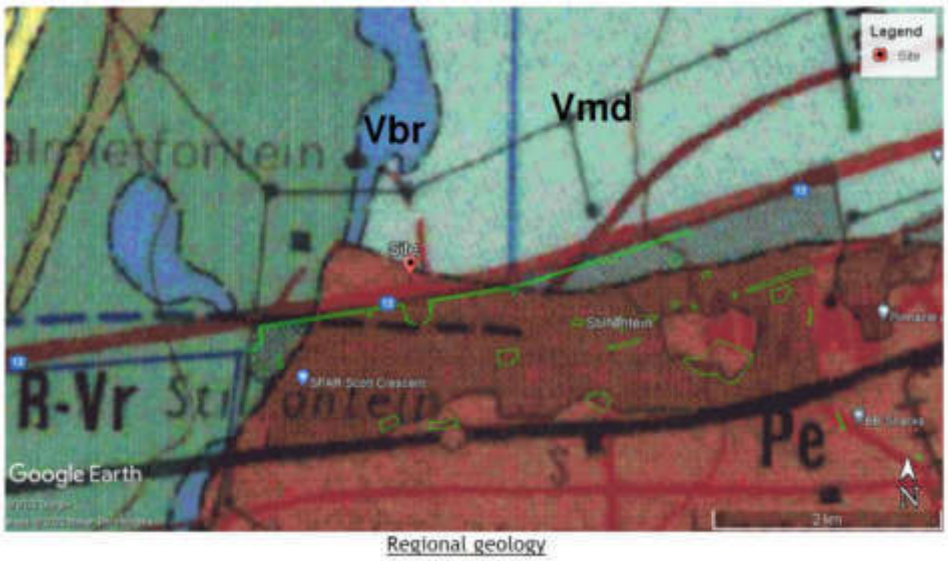
If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

This section regarding the Geology of the site is taken from the Geotechnical Investigation done by Geo Simplicity Geotechnical Engineering (Pty) Ltd; December 2020.

<u>Geology and generalized soil profile:</u>
According to the 1:250 000 East Rand 2628 geological map; the site is underlain by and Shale; Sandstone or Coal of the Ecca Group, Karoo Sequence and bordered by Dolomite of Malmani Subgroup, Chuniespoort Group.

The bulk of the site is in fact underlain by Dolomite; whilst the southern part where the various structures; such as diesel pumps & canopies; convenience store & offices, as well as the tank farm, is to be located, is underlain by Sandstone.

The regional geology of the site and surrounding area is illustrated in the following figure 22:



Regional geology

Figure 26: Regional geology

Where:
Pe = Sandstone, Shale or Coal beds
Vmd = Dolomite and Chert
R-Vr = Lava; Agglomerate or Tuff

The site can be divided into three geotechnical zones; namely:

- *Zone A: D2 CLASS 2(1)//1 : A low probability for any size sinkhole forming and a low probability for subsidence are the hazard characterisation assessed for both non-dewatering and dewatering scenarios. Commercial development may be considered.*
- *Zone B – D3 CLASS 3(5)//1: A medium to high probability for small size sinkholes; a medium probability for medium size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios. Commercial development with limited restrictions may be considered.*
- *Zone C – D4 Class 7(6)//1: A medium to high probability for small; medium and large size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios. Commercial development restricted to storage facilities and surfaced parking.*

Please refer to figure 24 below for the Geotechnical zoning.

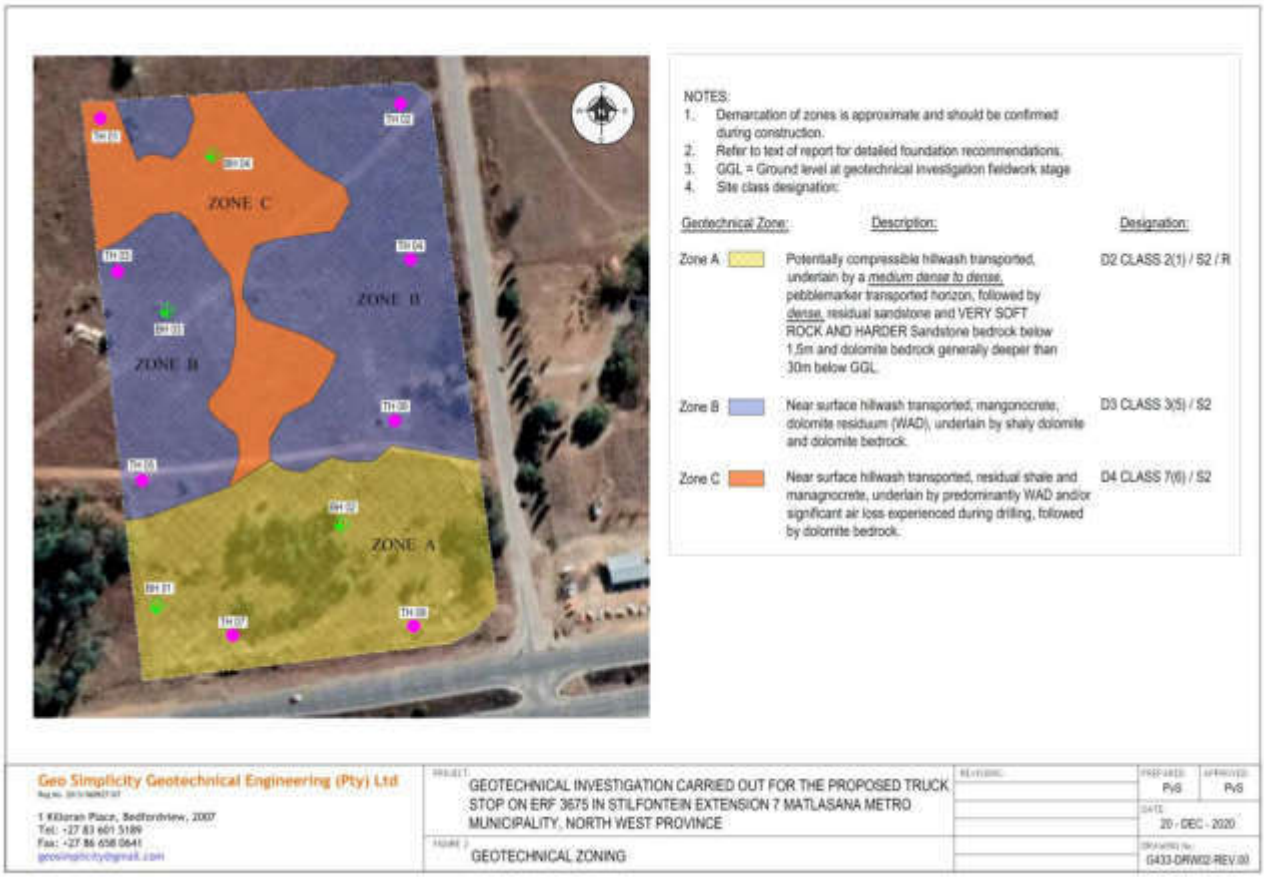


Figure 27: Geotechnical Zonings

Dolomite Stability Assessment:

Geology: According to the 1:250 000 Geological Series (1973), Sheet No. 2626 Wes Rand, the site is situated on the edge of a Karoo Supergroup outlier surrounded by dolomite and chert of the Transvaal Supergroup. Most of the site is underlain by dolomite and chert (Chuniespoort Group) of the Transvaal Supergroup with a portion of the southern part being underlain by Karoo Supergroup sediments (mudrock and sandstone).

Abundant outcrops of dolomite are visible over the northern two-thirds of the property. The southern third is devoid of dolomite outcrops and is covered by a layer of colluvial and residual soil. Evidence of Karoo-age sediments was seen in the excavation next to the water pipeline at the southern edge of the property.

Conclusion and recommendations:

The site has been divided into three zones namely; Zone A (Class 2(1)//1), Zone B (Class 3(5)//1) and Zone C (Class 7(6)//1.

Zone A: Class 2(1)//1:

Inherent Hazard Characterisation: A low probability for any size sinkhole forming and a low probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios.

Development potential: Commercial development; as proposed (C5), may be considered in Zone A. The requirements set out in SANS 10400-H should be considered in the design of any structure.

General dolomite precautionary measures should be implemented.

Zone B: Class 3(5)//1:
Inherent Hazard Characterisation: A medium to high probability for small size sinkholes; a medium probability for medium size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios.

Development potential: Limited restrictions are placed on the type of commercial development that may be considered in Zone B.

Stringent precautionary measures must be implemented.

Zone C: Class 7(6)//1:
Inherent Hazard Characterisation: A medium to high probability for small; medium and large size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios.

Development potential: Commercial development is restricted to storage facilities (C6) surfaced parking (C7) in Zone C. Further drilling may prove that Zone C is not as extensive as indicated.
Stringent precautionary measures must be implemented.

The importance of careful water management cannot be over-emphasised as poor water control in one area may lead to some form of instability in another area. The owner/ tenant of this development must be made aware of the importance of the recommended precautionary measures. To create and maintain an awareness of the risk of instability in a karst environment; a Dolomite Risk Management Plan (DRMP) should be implemented on this site. An example of a DRMP is given in Appendix F. The importance of a responsibly managed; site-specific DRMP cannot be over-emphasised.

d. Land use character of surrounding area

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

1. Vacant land	2. River, stream, wetland	~~3. Nature conservation area~~	~~4. Public open space~~	~~5. Koppie or ridge~~
6. Dam or reservoir	**7. Agriculture**	**8. Low density residential**	**9. Medium to high density residential**	~~10. Informal residential~~
~~11. Old age home~~	12. Retail	13. Offices	~~14. Commercial & warehousing~~	~~15. Light industrial~~

~~16. Heavy industrial[AN]~~	17. Hospitality facility	18. Church	**19. Education facilities**	**20. Sport facilities**
~~21. Golf course/polo fields~~	~~22. Airport[N]~~	~~23. Train station or shunting yard[N]~~	~~24. Railway line[N]~~	~~25. Major road (4 lanes or more)[N]~~
~~26. Sewage treatment plant[A]~~	~~27. Landfill or waste treatment site[A]~~	~~28. Historical building~~	~~29. Graveyard~~	~~30. Archeological site~~
~~31. Open cast mine~~	~~32. Underground mine~~	~~33.Spoil heap or slimes dam[A]~~	**34. Small Holdings**	
Other land uses (describe):				

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

1.1 NORTH

	1	**1**	**1**	**1**	**1**
	1	**1**	**13/17/ 18/19**	**1**	**1**
WEST	**1**	**1**		**12/ 13/ 17**	**1**
	8/17/ 19/20	**8/17/ 19/20**	**8/17/ 19/20**	**8**	**1**
	8/17/ 19/20	**8/17/ 19/20**	**8/17/ 19/20**	**8**	**8**

EAST

SOUTH

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

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

Have specialist reports been attached	YES	**NO**

If yes indicate the type of reports below

N/A

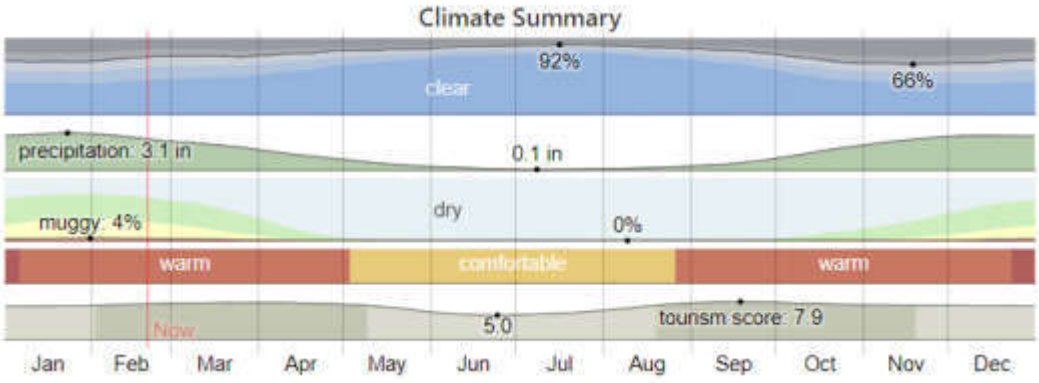
e. The Physical Environment

i. Topography

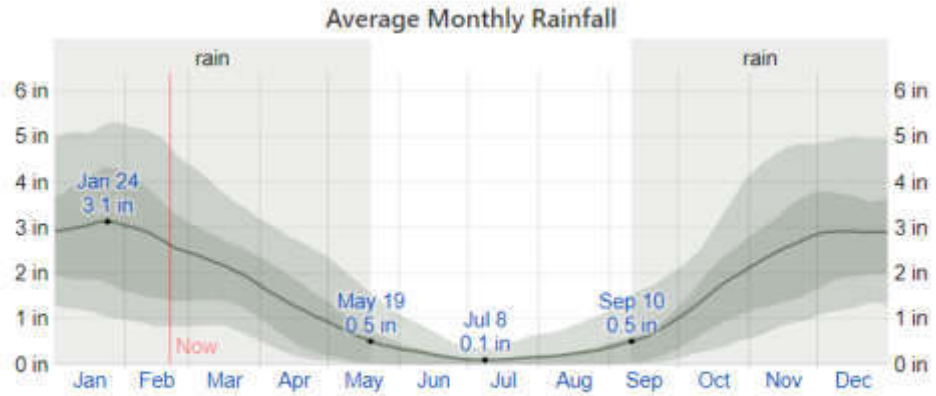
The topography of the site can be explained as fairly flat with no significant slope and located at an elevation of 1255 mamsl. The regional drainage of the site is a south easterly direction at a slope of approximately 0.005 (0.5%).

ii. Climate; rainfall and humidity

Stilfontein has a typical South African “Highveld” climate with temperatures ranging from 18°C in the winter and 30°C in the summer months. Most of the rainfall occurs from October to March which can be classified as a typical summer rainfall area.

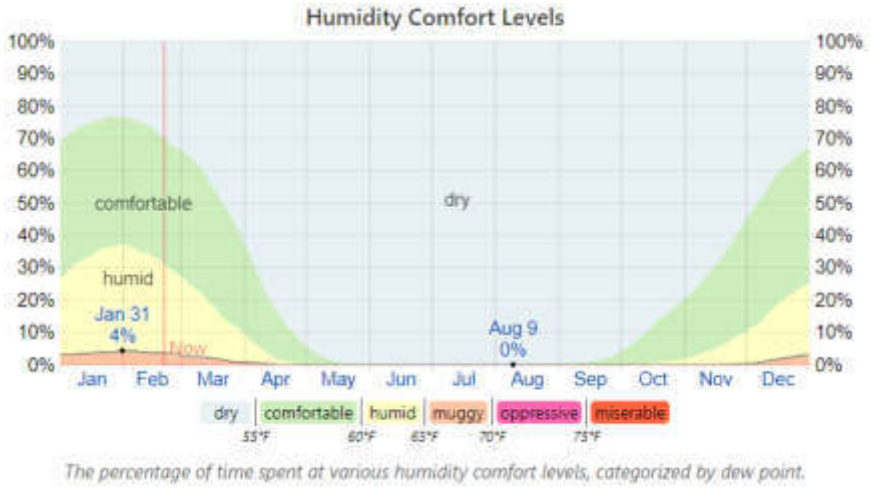


The rainfall is calculated by accumulating over a sliding 31-day period centred around each day of the year. Stilfontein experiences significant seasonal variation in monthly rainfall. The rainy period of the year lasts for 8.3 months, from September 10 to May 19, with a sliding 31-day rainfall of at least 0.5 inches. The most rain falls during the 31 days centred around January 24, with an average total accumulation of 3.1 inches. The rainless period of the year lasts for 3.7 months, from May 19 to September 10. The least rain falls around July 8, with an average total accumulation of 0.1 inches.



The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. The thin dotted line is the corresponding average liquid-equivalent snowfall.

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night. The perceived humidity level in Stilfontein, as measured by the percentage of time in which the humidity comfort level is muggy, oppressive, or miserable, does not vary significantly over the course of the year, staying within 2% of 2% throughout.



f. The Biological Environment

This section is taken from the Terrestrial Biodiversity Impact Assessment conducted by Enviridi Environmental Consultants.

i. Biome:

The project area is located in the Grassland Biome. The Grassland Biome is found chiefly on the high central plateau of South Africa; and the inland areas of KwaZulu-Natal and the Eastern Cape. Grasslands are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent; except in a few localized habitats. Geophytes (bulbs) are often abundant. The Grassland Biome is considered to have an extremely high biodiversity; second only to the Fynbos Biome. Rare plants are often found in the grasslands; especially in the escarpment area. These rare species are often endangered; comprising mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered.

ii. Broad Vegetation Description:

The project area is located in the Vaal Reefs Dolomite Sinkhole Woodland (Least Consern; NBA 2018); within the Grassland Biome. The northern border of the property falls on the Vaal-Vet Sandy Grassland (Endangered; NBA 2018). The Truck stop falls exclusively within the Vall Reefs Dolomite Sinkhole Woodland (Least Consercn; NBA 2018).

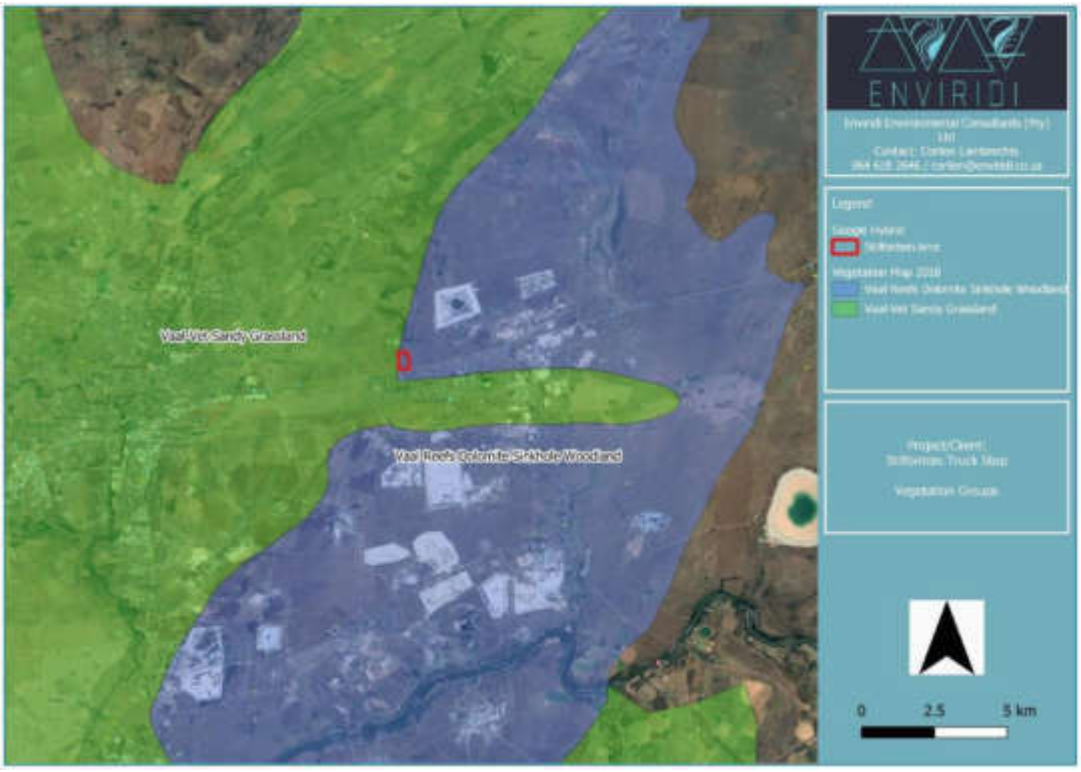


Figure 28: Vegetation Group for the Stilfontein Truck Stop

1. Vaal Reefs Dolomite Sinkhole Woodland (Least Concern; NBA 2018)

A description of the vegetation type; extracted from the CD accompanying Mucina & Rutherford (2006); is presented below.

Vaal Reefs Dolomite Sinkhole Woodland is distributed though the North-West and Free State Provinces in a small area associated with the dolomite sinkholes in and around Stilfontein and Orkney (Vaal Reefs). The Vall River forms the southern distribution limit of this vegetation unit.

The vegetation type is characterised by slightly undulating landscape dissected by prominent rocky chert ridges and supporting a grassland-woodland vegetation complex. The most typical vegetation feature is the woodland; which occurs naturally in clumps around sinkholes; especially in places of dolomite outcrops.

- Trees: Vachellia erioloba (d); Celtis Africana (d); Rhus lancea (d); Senegalia caffra; Vachellia karoo; Cachellia robusta subsp. Clavigera.
- Shrubs: Diospyros lycoides subsp. Lyciodes (d); Ehretia rigida (d); Grewia flava (d) Asperagus suaveclens (d); Gymnosporia heterophylla (d); Pavonia burchellii (d); Sida dregei (d); Anthospermum hispidulum; Asparagus laricinus; Diospyros pallens; Felicia muricata; Indigfera heterotricha; Mendora Africana; Phyllanthus incurvus; Triumfetta sonderi; Ziziphus zeyheriana; Elephantorrhiza elephantine; Asparagus africanus.
- Graminoids: Aristida congesta (d); Digitaria eriantha (d); Eragrostis biflora (d); E. curvula (d); Themeda triandra (d); Anthephora pubescens; Aristida canescens; Bewsia;

biflora; Brachiaria nigropedata; B. serrate; Choris pycnothrix; Cymbopogon caesius; C. pospischili; Cynodon dactylon; Cyperus margaritaceus; Diheteropogon amplectens; Elionurus muticus; Eragrostis chloromelas; E. lehmanniana; E. racemosa; E. superba; Eustachys paspaloides; Heteropogon contortus; Melinis repens subsp. Repens; Panicum coloratum; Setaria sphacelata; Triaphis andropogonoides.

- Herbs: Commelina afracana (d); Barleria macrostegia; Chamaecrista mimosoides; Chamaesyce inaquilatera; Chascanum hederaceum; Crabbea angustifolia; Cyanotis speciosa; Dicoma anomala; Hermannia depressa; Indigofera daleodes; I.l torulosa var. angustiloba; Impomoea obscura; Justicia anagalloides; Nodorella hottentotica; Osteospermum muricatum subsp. logiradiatum; Polichia campestris; Pterodiscus speciousus; Vemonia oligecephala; Albuca setosa.

No areas delineated for Conservation fall within the Stilfontein proposed development site as per the North West Conservation Plan.

Within the National Threatened Ecosystems (2011); sections to the west of the site fall within Vall-Vet Sandy Grassland (GH10); which has a status of Endangered (EN) and is known to be Poorly Protected. The bulk of the site has the status of Least Concern (Vaal Reefs Dolomite Sinkhole Woodland) and the footprint falls exclusively within this Vegetation Group.

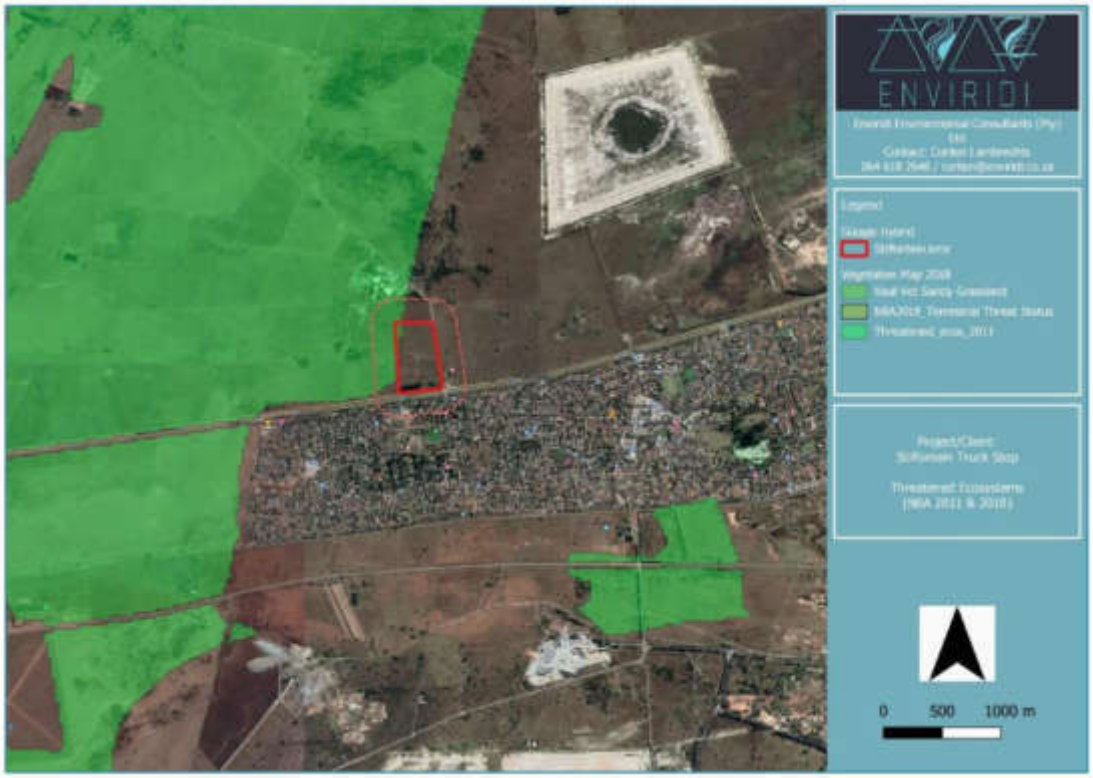


Figure 29: Terrestrial Ecosystems

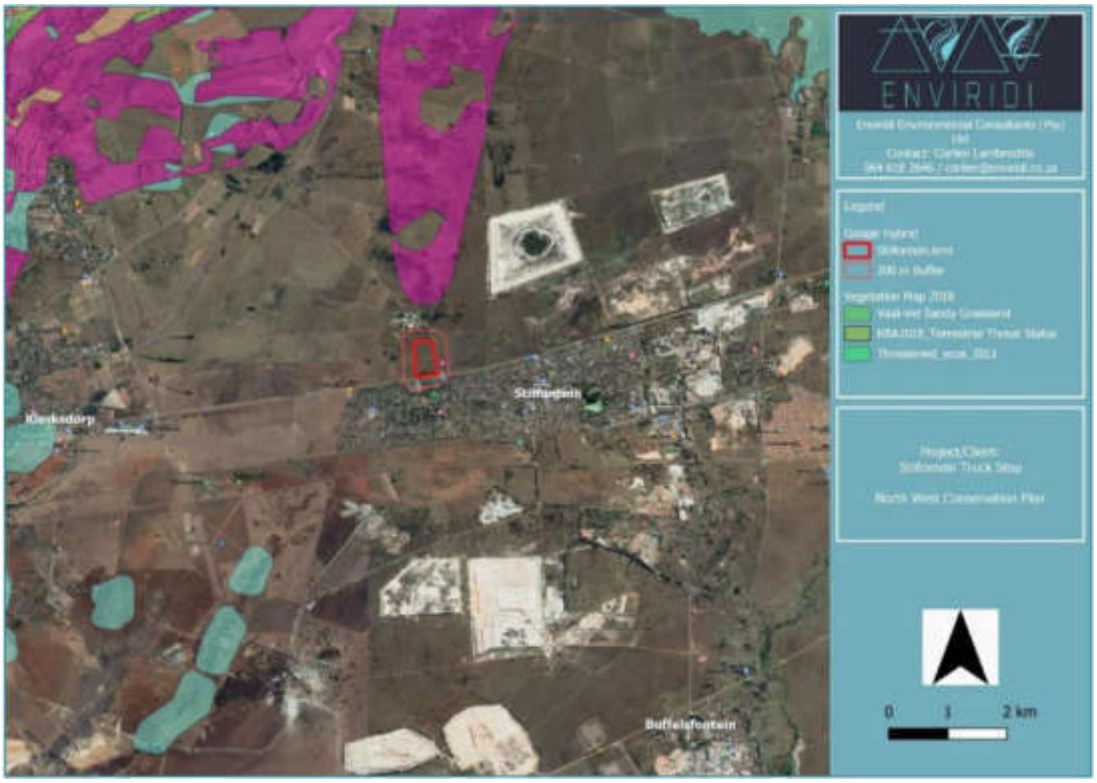


Figure 30: Vegetation map

2. Flora

The study area falls within the 2626DD Quarter Degree Square. Information on plant species recorded was extracted from the POSA only database hosted by SANBI; based on a 25km x 25km square surrounding the project area. A list of plant species that have previously been recorded in the aforementioned area is provided in the Biodiversity Assessment Report under Appendix F1. The results indicated that two hundred and eighty-eight (288) plant species have been recorded in the area queried; consisting of sixty-eight (68) families. The most prominent family is Asteraceae; with forty (40) species; followed by Poaceae; with thirty-seven (37) species. Twenty-one (21) endemic species and twenty-nine (29) exotic species are known to occur within the area queried.

Twenty-five (25) species listed for the area are classified as species of conservation concern (SCC) according to the North West Biodiversity Management Act (Act No. 4 of 2016) (NWBMA); IUCN Red Data List and the endemism of the species. None of the species recorded for the area queried are classified in terms of the ToPS list or NFA.

Of the twenty-nine (29) exotic plant species recorded on POSA for the area queried; five species are listed as alien and invasive plant (AIP) species in NEMBA; 2004 (Act 10 of 2004).

Twenty (20) species were found to possibly occur on site that have medicinal uses:

- Aloe ferox
- Arctotis arctotoides

- Artemisia afra
- Carissa bispinosa
- Clematis brachiate
- Convolvulus sagittatus
- Crinum Bulbispermum
- Dombeya rotundifolia
- Grewia occidentalis
- Helichrysum nudifolium
- Hypoxis hemerocallidea
- Pelargonium sidoides
- Pellaea calomelanos
- Ranunculus multifidus
- Salix mucronata
- Senna italic
- Tarchonanthus camphoratus
- Vachellia karroo
- Withania somnifera
- Zanthoxylum capense

3. Fauna Assessment and Species lists compiled

A baseline assessment was conducted to established whether any potentially sensitive species might occur on site. The Virtual Museam and Animal Demography Unit (ADU) was used to compile species lists based on the sightings and data gathering from the South African Biodiversity Institute.

The importance of a baseline study is to provide a reference condition to determine the current state of the environment and to draw comparisons between the potential of the area and current degradation form surrounding land uses. This will be compared in term of the future changes due to the proposed development by the client.

Aerial photographs and satellite imagery were used to delineate potential sensitive areas and wetland areas to guide the sampling during the field visit. During the filed assessment; sensitive species were determined according to their close relationship and dependence on the vegetation type and the possible wetlands.

4. Mammals

Forty-four (44) mammal species were found to possibly occur within the QDS; most of which will not likely occur on-site and represent game possibly kept in the region. Three (3) species are classified within the National and International Red Data List and many more has been listed on the ToPs list and/ or Provincially Listed.

The Nationally/ Internationally Protected species are not expected to occur on-site due to the terrain and habitat available on the footprint. From the aerial footage; it is also observed that

it seems a truck stop has already been established within the farm portion just outside the northern border of the proposed layout; meaning impacts and noise are already present.

Table 8: Red listed mammals

Table 6: Red listed Mammals

Family	Scientific name	Common name	Red list category
Bovidae	*Aepyceros melampus*	Impala	Least Concern, Schedule 5[2] NWBMA – Not expected to occur on-site

Bovidae	*Alcelaphus buselaphus caama*	Red Hartebeest	Least Concern (2008), ToPs species of national importance Schedule 2[3] & 5 NWBMA – Not expected to occur on-site
Bovidae	*Antidorcas marsupialis*	Springbok	Least Concern (2016) Schedule 5 NWBMA – Not expected to occur on-site
Bovidae	*Connochaetes taurinus taurinus*	Blue Wildebeest	Least Concern (2016), ToPs Protected Schedule 2 & 5 NWBMA – Not expected to occur on-site
Bovidae	*Damaliscus pygargus phillipsi*	Blesbok	Least Concern (2016), Protected ToPS 2013, Protected – to be managed ecologically sustainable ToPS 2015, Schedule 2 & 5 NWBMA – Not expected to occur on-site
Bovidae	*Damaliscus pygargus pygargus*	Bontebok	Vulnerable (2016), Protected ToPS 2013 – Not expected to occur on-site
Bovidae	*Kobus ellipsiprymnus ellipsiprymnus*	Common Waterbuck	Least Concern (2016), Protected ToPS 2013, Schedule 2 & 5 NWBMA – Not expected to occur on-site
Bovidae	*Oryx gazella*	Gemsbok	Least Concern (2016), Protected ToPS 2013, Schedule 2 & 5 NWBMA – Not expected to occur on-site
Bovidae	*Raphicerus campestris*	Steenbok	Least Concern (2016) Schedule 5 NWBMA – Not expected to occur on-site
Bovidae	*Sylvicapra grimmia*	Bush Duiker	Least Concern (2016) Schedule 5 NWBMA – Not expected to occur on-site
Bovidae	*Syncerus caffer*	African Buffalo	Least Concern (2008), Protected ToPS 2013, Schedule 2 NWBMA – Not expected to occur on-site
Bovidae	*Taurotragus oryx*	Common Eland	Least Concern (2016) Schedule 2 & 5 NWBMA
Bovidae	*Tragelaphus angasii*	Nyala	Least Concern (2016) Protected ToPS 2013 – Not expected to occur on-site
Bovidae	*Tragelaphus strepsiceros*	Greater Kudu	Least Concern (2016) Schedule 5 NWBMA – Not expected to occur on-site
Canidae	*Canis mesomelas*	Black-backed Jackal	Least Concern (2016) Schedule 4[4] NWBMA – Not expected to occur on-site
Equidae	*Equus quagga*	Plains Zebra	Least Concern (2016), Near Threatened (IUCN), Protected – to be managed ecologically sustainable ToPS 2015, Vulnerable ToPS 2013 Schedule 2 & 5 NWBMA – Not expected to occur on-site
Giraffidae	*Giraffa giraffa giraffa*	South African Giraffe	Least Concern (2016), Protected ToPs Schedule 2 & 5 NWBMA – Not expected to occur on-site
Hyaenidae	*Proteles cristata*	Aardwolf	Least Concern (2016) Schedule 2 & 5 NWBMA – Not expected to occur on-site

Hystricidae	*Hystrix africaeaustralis*	Cape Porcupine	Least Concern (2016) Schedule 4 NWBMA – Not expected to occur on-site
Leporidae	*Lepus sp.*	Hares	All *Lepus* spp. Schedule 4 NWBMA
Leporidae	*Lepus capensis*	Cape Hare	Least Concern (2016) Schedule 4 NWBMA
Leporidae	*Lepus saxatilis*	Scrub Hare	Least Concern (2016) Schedule 4 NWBMA
Macroscelididae	*Elephantulus myurus*	Eastern Rock Elephant Shrew	Least Concern (2016) Schedule 2 NWBMA – Not expected to occur on-site
Mustelidae	*Aonyx capensis*	African Clawless Otter	Near Threatened (2016), ToPs Protected (2013) Schedule 2 NWBMA – Not expected to occur on-site
Pedetidae	*Pedetes capensis*	South African Spring Hare	Least Concern (2016) Schedule 4 NWBMA
Procaviidae	*Procavia capensis*	Cape Rock Hyrax	Least Concern (2016) Schedule 4 NWBMA
Suidae	*Phacochoerus africanus*	Common Warthog	Least Concern (2016) Schedule 4 NWBMA – Not expected to occur on-site

Many of these species are likely recorded in the QDS based on game farming activities found within the area as many of the species listed are generally kept as game. No Bovidae species or any other medium-large mammals area expected to occur on the site designated for the truck stop development as it represents urban habitat.

5. Avifaunal

According to data collected during the Southern African Bird Atlas Project 2 (SABAP2); Two hundred forty-seven (247) species have been recorded for the specific pentad (2650_2645) where the activities are proposed; and seven (7) species have been indicated to be red listed.

The updated/ latest known status in accordance with the SABAP2 and BLSA (2018/2018) data have all been provided within Table 7 below. The following Avifaunal species found in the region are considered Red listed as reference in the various databases utilized and these include:

Table:8: Red listed Avifauna

Table 7: Red listed Avifauna

Common Name	Scientific Name	Regional	Global
Falcon, Lanner	*Falco biarmicus*	VU	LC
Flamingo, Greater	*Phoenicopterus ruber*	NT	LC
Flamingo, Lesser	*Phoenicopterus minor*	NT	NT
Marsh-harrier, African	*Circus ranivorus*	EN	LC
Sandpiper, Curlew	*Calidris ferruginea*	LC	NT
Tern, Caspian	*Sterna caspia*	VU	LC
Vulture, White-backed	*Gyps africanus*	CR	CR

The avifaunal species listed mostly have specialised niches; such as surface water; wetlands; pans; migratory species and rocky outcrops. None of these specialised habitat types exist (in the condition that would be required) on the site.

6. Butterflies:

Forty (40) butterfly species were fond for the 2626DD; all of which are categorized as Least Concern by SANBI (South African Butterfly Conservation Assessment – SABCA 2013).

7. Other Invertebrates:

Sixteen (16) Odonata species and one (1) spider species have been recorded within the area; but none of these species are known to have a red listed status. The singly spider species recorded is not an accurate reflection for the area and many other species will likely occur within the region.

8. Reptiles:

Nine (9) reptile species were recorded for the QDS. No Nationally/ Internationally red listed or provincially protected species were recorded.

9. Amphibians:

Seven (7) species of Amphibians were shown as possible occurrence within the area; and none have been awarded a red listed status.

In conclusion the area has been largely transformed and only typical urban avifaunal species were sighted during the field assessment. Smaller mammals were also observed (signs and dung), but the faunal community has been vastly impacted and the habitat support offered by this area is seen as very low. Several foot paths were observed during the field assessment based on the fact that humans will utilise the park to cross towards the other side of the road. A historic depression or shallow pan area occurs towards the south western border, but little water remains and the area seems to be utilised as an informal dumping terrain, specifically building rubble. An informal road also crosses the site and this road is also utilised by the truck stop (or similar facility) located directly north of the development footprint.

The faunal investigation provides a description of the ecological diversity in terms of species identification as well as the occurrence of threatened/ sensitive species that is dependent on available habitat. No National Species of Conservation Concern (SCC) were sighted or thought to occur due to the nature of the vegetation units and associated habitat. Those listed provincially are all species that may be hunted with landowner consent and do not constitute formal protection in terms of permits required.

A formal terrestrial management plan forms part of the Terrestrial Biodiversity Assessment and it is suggested that the management plan and mitigation measures be implemented.

g. Wetlands:

The delineation of wetlands in dolomite geology derived soils is highly challenging as these soils contain very high Mn levels that poise redox reactions and leads to the almost complete

absence of expression of Fe redox morphology. As a general rule the use of vegetation signatures is preferred when conducting such investigations in dolomite dominated areas. (Wetland Identification and Site Assessment Report, TerraSoil Science, 28 September 2020).

The land type; topography and geological setting of the site have been elucidated in the Wetland Identification report under Appendix E2. An impoundment of water is evident in the southern section of the site. (It falls just outside to the west of the footprint for the proposed development).

The aerial photograph interpretation was conducted through the use of a large number of historical aerial photographs (dating form 1937) and Google Earth images. The motivation for the use of various images from different seasons and years was to be able to identify the extent of the wetland areas associated with the watercourses.

The historical aerial photograph of 1939 is provided in the figure 27 below and indicates the impoundment immediately north of the current N12 road alignment and west of the boundary footprint for the proposed development. The photographs of 1944, 1961, 1966, 1970, 1975 and 1991 are provided in Figure 28 below. These images indicated a changing surrounding environment and impoundment increasing in size.

Figure 31 (above and below): Historical aerial photograph (1939) of the impoundment (yellow arrow) immediately north of the current N12 road alignment.

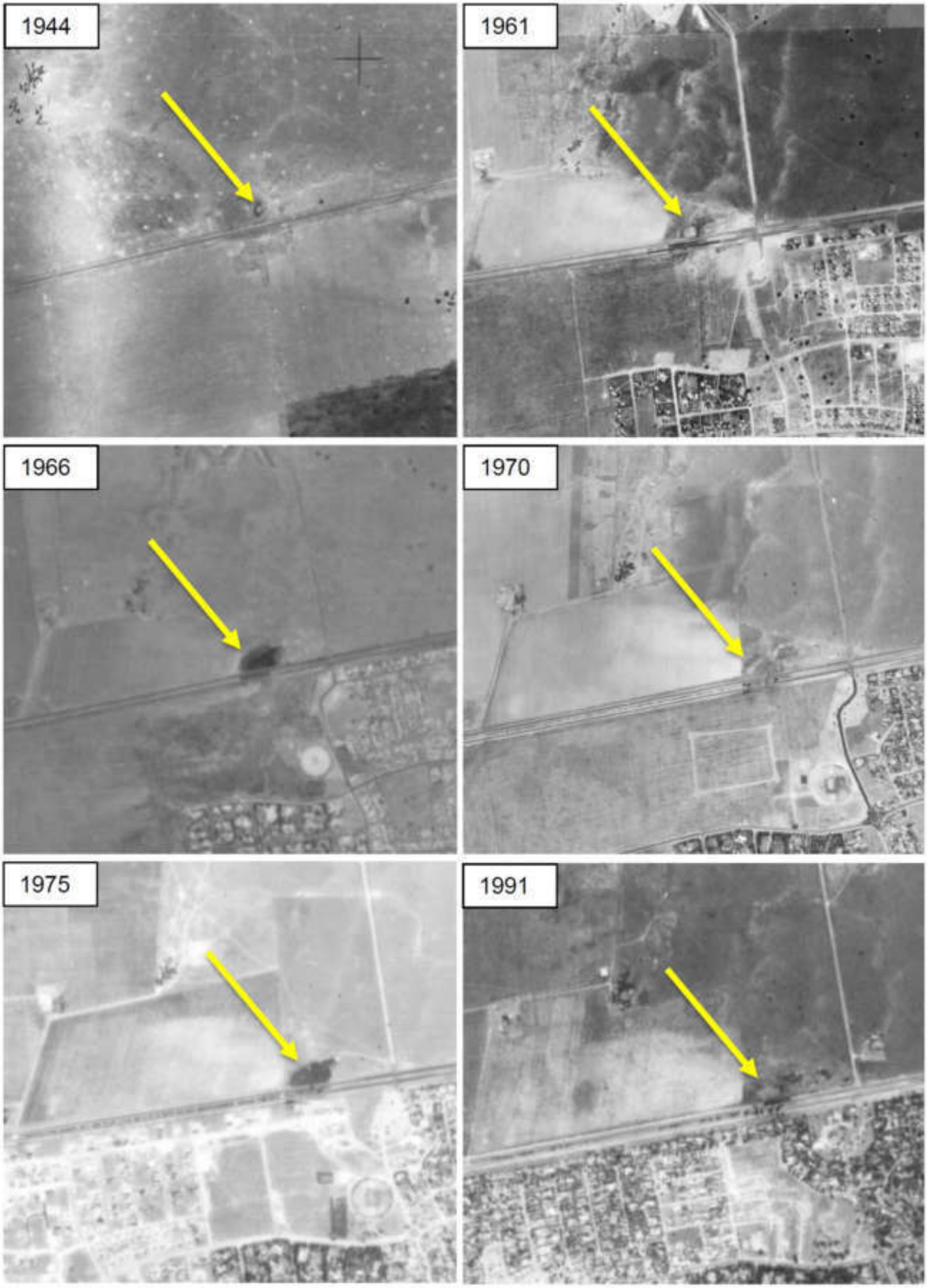

1944
1961
1966
1970
1975
1991

Figure 32: Historical aerial photographs (year in left top corner) of the impoundment (yellow arrow) immediately north of the current N12 road alignment.

Figure 33: Historical aerial photographs (2006) of the impoundment (yellow arrow) immediately north of the current N12 road alignment.

The Google Earth images span from 2005 to 2020 (Figure 29 and 30) and indicated the impoundment with increasing expression of vegetation signatures. These signatures are predominantly form Eucalyptus trees. No other wetland and watercourse related signatures could be identified on or around the site.

Figure 34: Google Earth images of the site (top: 2005/06/14); bottom: 2014/10/06) indicating the impoundment with increasing vegetation signatures.

Figure 35: Google Earth images of the site (top: 2018/05/25); bottom: 2020/01/01) indicating the site in the dry and wet seasons as well as the impoundment with increasing vegetation signature (Eucalyptus trees).

The terrain unit indicator: From the contour data a topographic wetness index (TWI) Figure 31 was generated for the site and the area surrounding the site. The TWI indicates that the site is at the crest of a water divide and as such does not lie in a watercourse area.

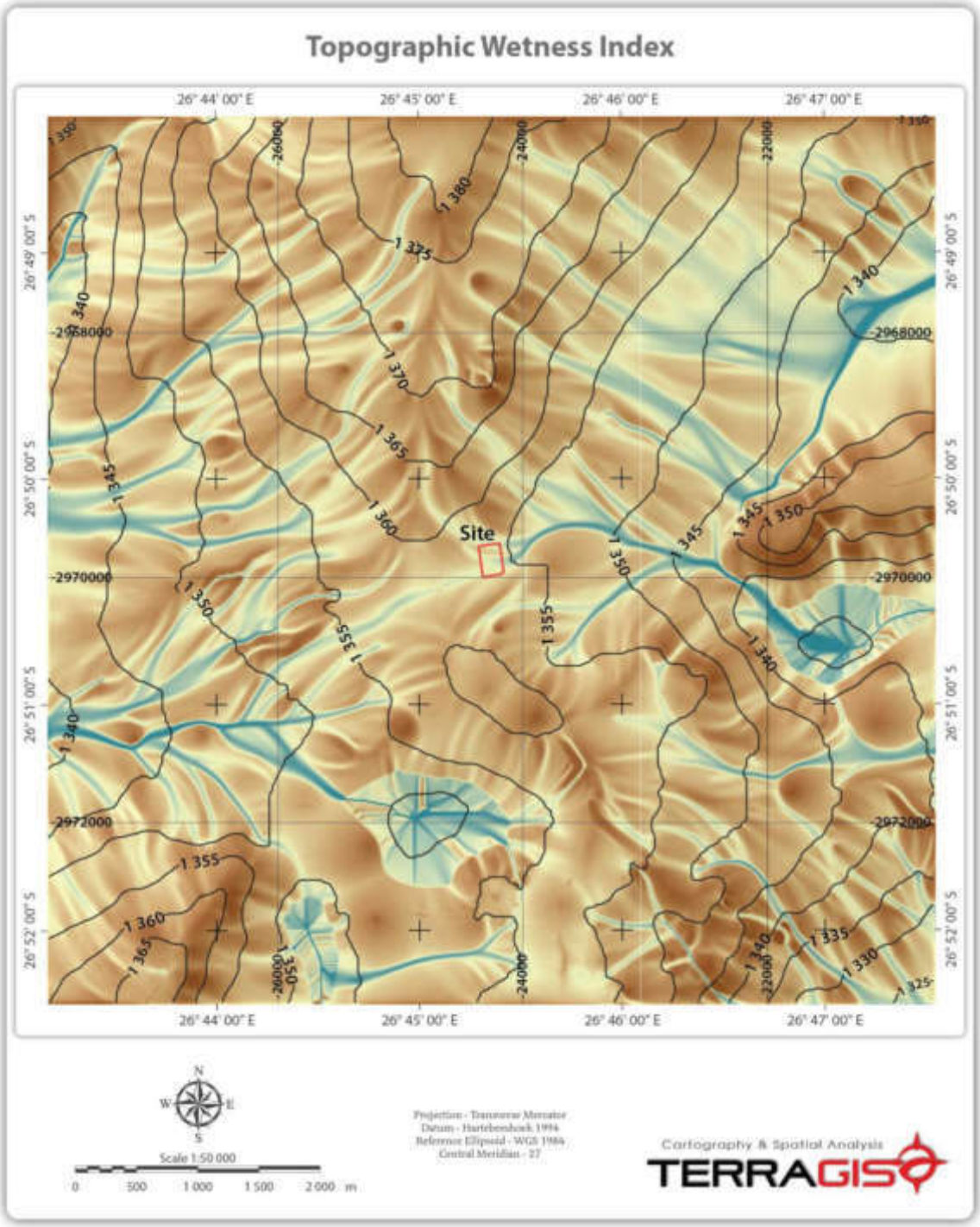


Figure 36: Topographic wetness index (TWI) of the broader investigation area.

The soil form and soil wetness indicators (and vegetation): The site investigation yielded that the impoundment on the site was excavated and is currently being used to accommodate what appears to be stromwater runoff or similar water. The conditions on the site are indicated

by the photographs in Figures 32 to 34. The soil forms that occur on the site are predominantly of the Hutton form (orthic A/ red apedal B/ unspecified material – usually hard or weathering rock) of varying depth. This is in line with the discussion provided in section 5.1.

From the soil, land surface and historical conditions of the site (as identified earlier) the only conclusion is that there is no natural wetland present on the site. The impoundment is a man-made feature and the soil conditions do not indicated the presence of any natural wetland conditions.

Figure 37: Impoundment and its associated vegetation

The artificial modifiers: The artificial modifiers on the site were addressed in the previous sections and related mainly to the man-made impoundment.

Figure 38: Soil and land surface conditions on the site

Figure 39: Soil and land surface conditions on the site.

The Wetland Identification and Site Assessment Report conducted by TerraSoil Science dated 28 September 2020 confirmed that there is no natural wetland on the site as the impoundment is a man-made structure. No soils with redoximorphic features were found on the site. The vegetation that is currently associated with the impoundment is dominated by Eucalyptus trees with wetland vegetation occurring within the permanently inundated sections. It is stated

From the soil; land surface and historical conditions of the site (as identified earlier) the only conclusion is that there is no natural wetland present on the site. The impoundment is a man-made feature and the soil conditions do not indicated the presence of any natural wetland conditions.

The Wetland Specialist recommended that a 10 meter buffer should be applied around the impoundment. The 10 meter buffer is suggested with the aim of protecting ecological features. The main reason for a 10 meter buffer is the distinct signs of soil disturbance in this section and that it would be difficult to assign any ecological or hydrological functioning of the site and soils outside of a 10 meter buffer area. Below is a Google Earth image with the delineated water feature and proposed (approximate) 10 meter buffer zone provided by the Wetland Specialist.

Figure 40: 10meter buffer around impoundment

h. Geohydrological Assessment:

The most important findings of the Geohydrological Assessment are summarised below:

Table 10: Summary of Geohydrological Assessment

Geohydrological Characteristics	Proposed truck stop and filling station, Stilfontein
Geology:	The site straddles the contact between underlying dolomite and chert of the Malmani subgroup (Chuniepoort Group) to the north and a Karoo Supergroup outlier (shale and sandstone of the Ecca Group) towards the south.
Aquifer Types:	Karst and fractured rock aquifers
Aquifer Classification:	Minor Aquifer System
Aquifer Vulnerability:	Highly vulnerable to pollutants
On-site depth to water table:	25.30 meters below surface
Groundwater Quality:	On site groundwater quality could not be determined. Regional groundwater quality generally acceptable for any use, but It can be safely assumed that mining operations have modified the natural water quality to a greater or lesser extent where mining has or is taking place.
Regional Groundwater Use:	Domestic use within a 1km radius from the site.
Overall risk after implementation of appropriate mitigation:	"Negligible Negative"

Based on the field work, interpretation of available and newly acquired data, the construction and operational of the truck stop and filling station will have an overall "negligible – negative" impact on the investigated geohydrological environment after implementation of appropriate mitigation measures. During the rating and ranking procedure of impacts; all identified impacts could be countered by appropriate mitigation.

Of particular importance, is the presence of sensitive receptors (boreholes used for human consumption) within 100m and downstream from the proposed project. Best management practices listed in the groundwater management framework should be incorporated into the Environmental Management Plan (EMP) to minimise the risk of groundwater contamination.

It is understood that the development will connect to the municipal supply for potable water. Given the sensitive nature of the underlying karst aquifer and the potential risk of dewatering and sinkhole development, no drilling of boreholes for abstraction purposes should take place.

A Groundwater Monitoring & Management Framework forms part of the Geohydrological Impact Assessment and should be utilized to address the management and mitigation measures of the groundwater impacts resulting from the construction and operational phase of the truck stop and filling station. This has also been incorporated into the EMPr.

i. Historical features:
    i. Cultural and Historical features

No heritage sites are present on the area earmarked for development. It should be noted that the sub-surface archaeological and/ or historical deposits and graves are always a possibility. Care should be taken during any work in the entire area and if any of the above is discovered; an archaeologist/ heritage practitioner should be commissioned to investigate.

According to the heritage consultant there are no visible restrictions or negative impacts in terms of heritage associated with the site.

12 ALTERNATIVES:

The identification of alternatives form a critical step within the EIA process as it identifies various possible development options for a site with the main aim of modifying; where possible; the development to minimize the negative impacts on the environment. Four alternative options were considered for the proposed site.

a. Lay-out alternatives

Four (4) different layout plans were considered as part of the proposed project.

Preferred Layout plan:

The proposed project entails the development of a Truck Stop and Filling Station consisting of the following uses:

1. 6 x 83 000 (3x above ground diesel tanks housed in a secured area within a bund and 3x underground petrol tanks).
2. 6 Bay Forecourt with the ability to service 6 rows of vehicles;
3. Shop;
4. Restaurant/ Dining;
5. Kitchen;
6. Laundromat;
7. Separate Mens and Ladies ablution facilities;
8. Pay Office;
9. Security;
10. Bulk Storage;
11. Truck overnight parking bays;
12. Car parking bays;
13. Separate loading/ offloading Courtyard;

14. Office and Staff toilets;
15. ATM machines;
16. Dry Store;
17. Coldrink Store;
18. Entertainment and Service Yard;
19. Fuel Clerk Room;
20. Generator Store;
21. Air Compressor Tank;
22. Company Signage;
23. Clinic and
24. Truck and car washbay.

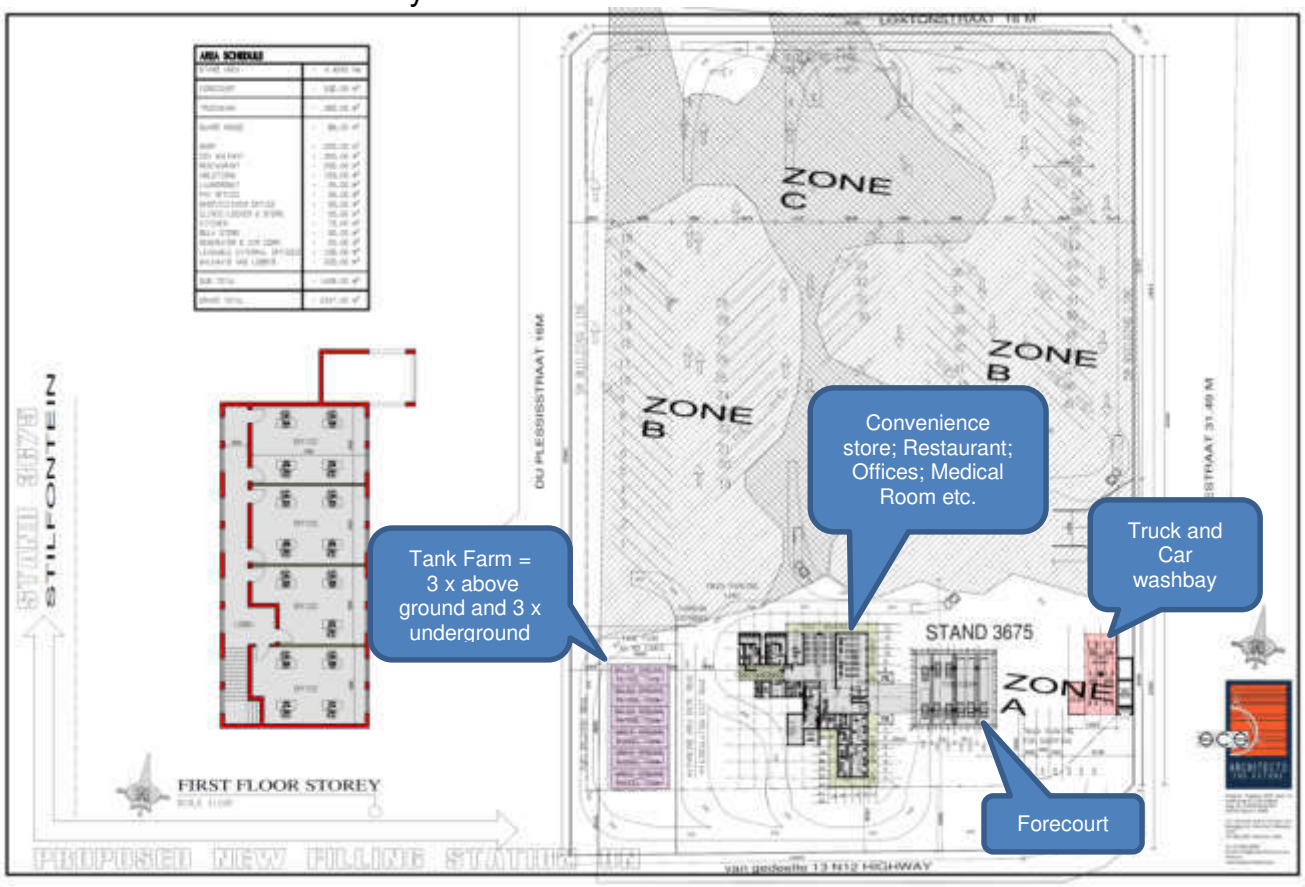


Figure 41: Proposed Layout (Please refer to Appendix A for Layout plans and Facility Illustration.)

<u>Alternative 1 Layout:</u>
The alternative layout 1 is similar to that of the proposal except that this alternative excludes a truck and car washbay. The following uses will be applicable to this Alternative 1 Layout.

1. 6 x 83 000 (3x above ground diesel tanks housed in a secured area within a bund and 3x underground petrol tanks).

2. 6 Bay Forecourt with the ability to service 6 rows of vehicles;
3. Shop;
4. Restaurant/ Dining;
5. Kitchen;
6. Laundromat;
7. Separate Mens and Ladies ablution facilities;
8. Pay Office;
9. Security;
10. Bulk Storage;
11. 113 x Truck overnight parking bays;
12. 28 x Car parking bays;
13. Separate loading/ offloading Courtyard;
14. Office and Staff toilets;
15. ATM machines;
16. Dry Store;
17. Coldrink Store;
18. Entertainment and Service Yard;
19. Fuel Clerk Room;
20. Generator Store;
21. Air Compressor Tank;
22. Company Signage; and
23. Clinic (Small medical room/office)

Figure 42: Layout Plan – Alternative 1 – Enlarged maps attached as Appendix A.


STAND 3675
Tank farm
Guard-house
FIRST FLOOR STOREY
PROPOSED NEW FILLING STATION

Alternative 2 Layout plan:

Alternative 2 contains the same uses/ activities as Alternative 1 Layout but located at different positions. The location of the parking area and that of building structure are swapped around with this layout. The truck stop and outbuildings are located to the north of the site boundary and the parking area located adjacent to the N12 Highway.

Please refer to the layout for Alternative 2 below.

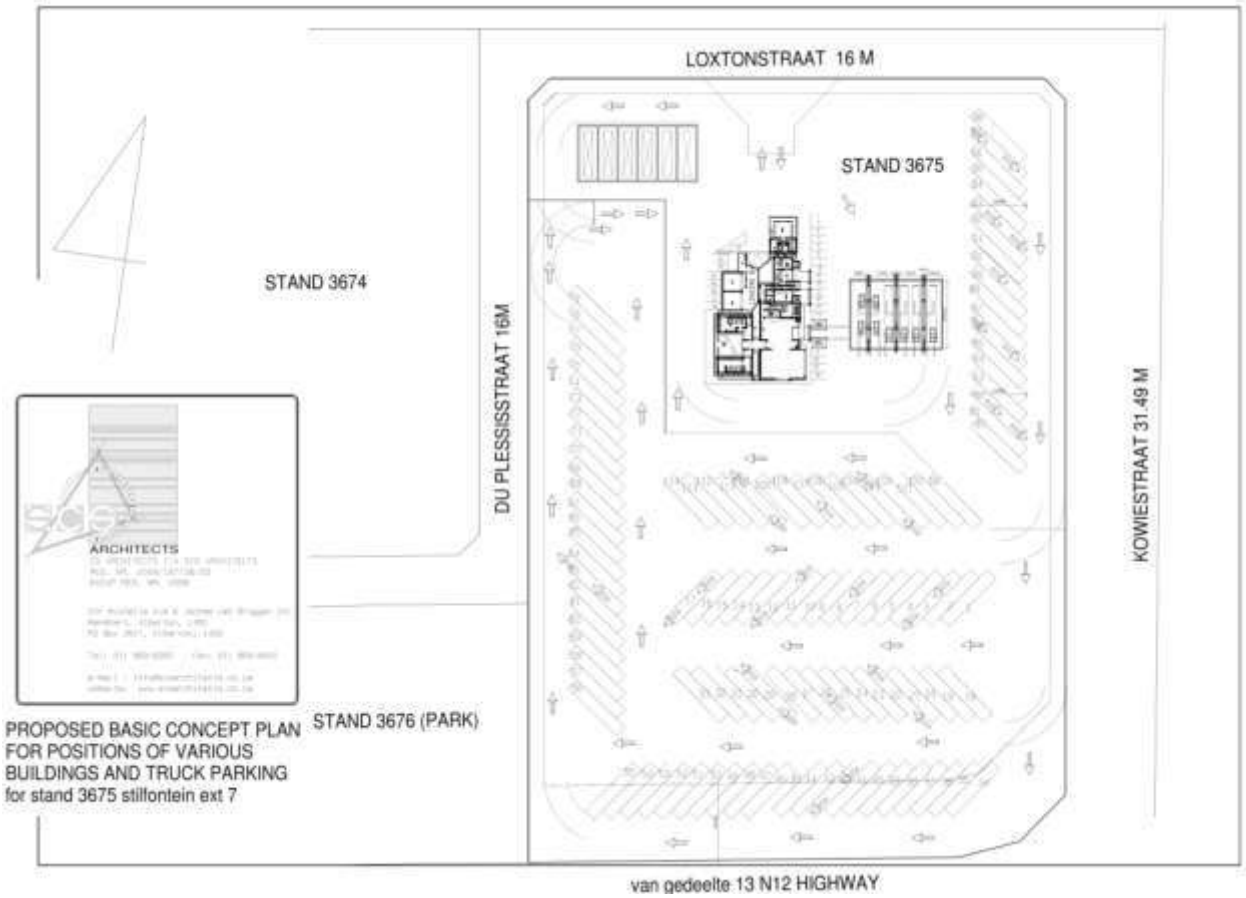


Figure 43: Layout Plan – Alternative 2

Alternative 3 Layout plan:

Alternative 3 contains the same uses/ activities as the Proposed Layout but located at different positions. The location of the tanks (three (3) above ground tanks and three (3) underground tanks) are situated 10 meters away from the eastern boundary. The truck and car washbay will be situated to the west of the site.

Please refer to the layout for Alternative 3 below.

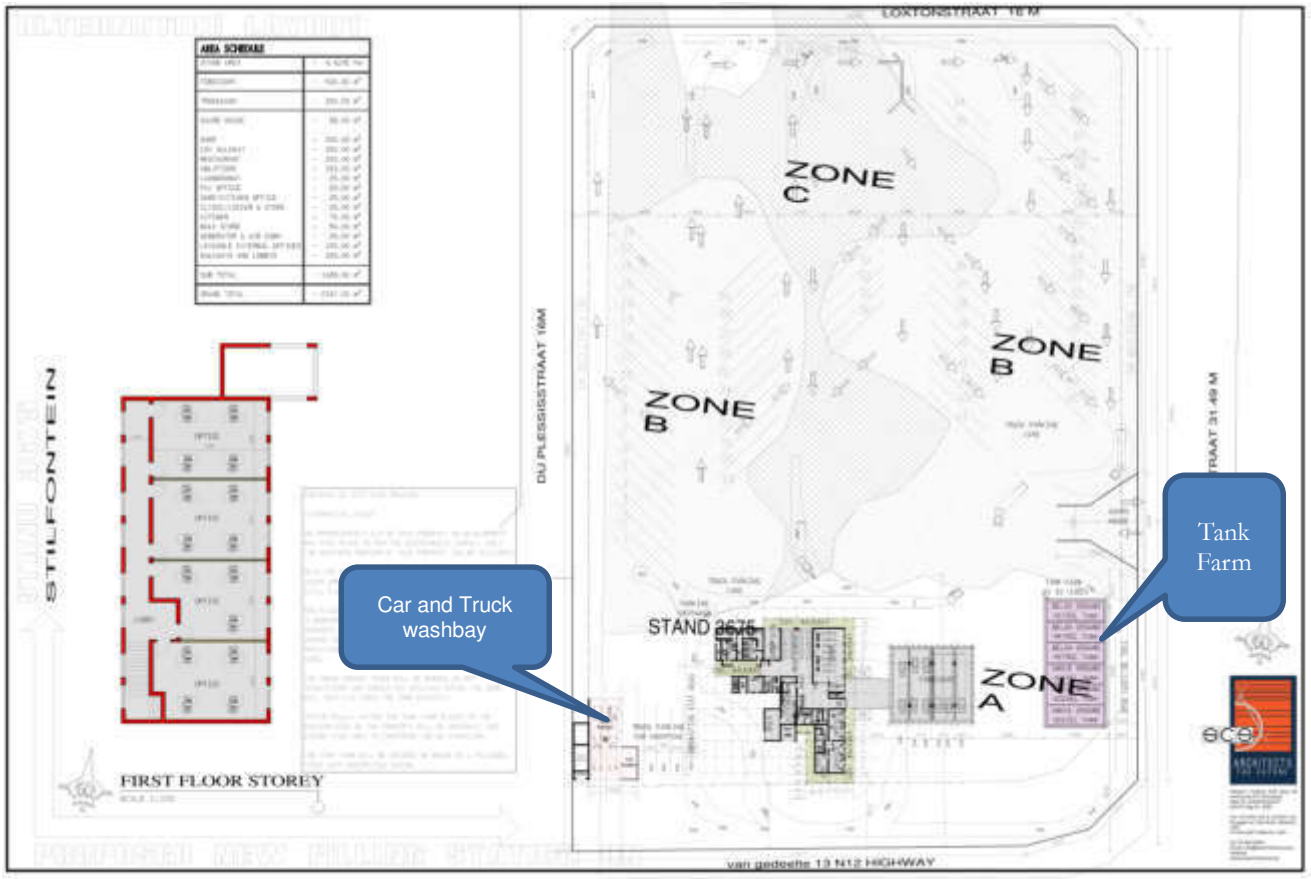


Figure 44: Alternative 3 Layout

b. Site alternatives

No site alternatives were considered for the proposed project as the property under investigation is owned by the applicant; Lesedi La Ka Trading and Projects CC. This portion of land is furthermore considered to be ideally located for the proposed use as it is situated next to the N12 highway and the zoning of the site is "Special" for purposes of a public garage; drive-in restaurants; shops and service enterprises. The feasibility study furthermore confirmed that the site will indeed be feasible for purposes of a filling station and truck stop. The site is considered to be ideally located for purposes of the truck stop and filling station as it is located next to the N12 which is a principle arterial road which feeds traffic to and from Potchefstroom; Klerksdorp and Stilfontein. No other truck stop is situated on the N12 between Potchefstroom and Klerskdorp. Exposure to traffic is also considered to be good with high volumes of approximately 20 665 vehicles per day passing in all directions with heavy vehicles being 2 821 heavy vehicles per day. The visibility for a truck stop on the site is considered to be very good as no abstractions or topography impairs the visibility of the site and is therefore considered to be easily visible to passing traffic from a very good distance away. Therefore no other site alternatives were considered.

c. Technology alternative

The most appropriate construction methods in terms of materials and equipment will be used during the construction phase. During the operational phase depending on the property owner and or retail owner and on what is available on the marked; the most practical and possible standards to make use of energy efficient machinery and equipment will be encouraged for example energy saving light bulbs; energy saving fridges and office equipment (air conditioners) etc.

No other technology alternatives have been investigated.

d. Activity Alternative:

Initially at the outset of the project it was the intention to construct a truck stop. Later on the need changed and the application was re-advertised and another public participation took place to inform all registered Interested and Affected Parties; Stakeholders and adjacent property owners of the inclusion of a filling station. Other than that no activity alternative was considered for the site as the zoning of the site is already in line with the proposed use/ activities applied for in this application. The zoning is earmarked “Special” for purposes of a Public Garage; Drive-in Restaurant; Shops and Service Enterprises.

It should also be kept in mind should any other use or activity other than a Public Garage and similar uses be considered or required that it will be necessary to undergo a rezoning application to change the zoning of the site to accommodate the desired activity. Therefore no other activity alternative is considered at this stage for the site.

e. No-go option

The no-go alternative means that the site remain in its current state and that the truck stop and filling station will not be constructed/ developed on the site.

The Competent Authority will normally decide upon this option should the site be deemed to consist of natural features; environment and vegetation that will be irreparable be lost should the development continue to take place. Sensitive area consisting of fauna and flora; geology etc. are considered in this regard. It is clear from the specialist studies conducted that some areas are deemed sensitive in terms of geology and vegetation; however with the relevant mitigation measures from the professional and specialist team; it should not have such a negative nor devastating effect on the environment that the proposed development cannot continue.

Direct and indirect benefits; such as job creation; capacity building; rates for the municipality and possibly upgrading of supply of services will not be realised. If not developed the site will derive no income and will not contribute to the services and total income of the area.

Therefore if the no-go alternative is followed no development will take place and given the fact that the site will eventually degenerate if left unmanaged; and as mentioned before the location is perfectly suited for a truck stop and filling station, it is reasonable to state that the

no-go option is less favourable than the preferred option presented. As already mentioned earlier on and within the Ecological Report this site has already been severely degraded. Leaving the site undeveloped also invites illegal vagrants and could also easily turn into an illegal dumping site.

13 PUBLIC PARTICIPATION:

The Competent Authority; in this case NWDEDECT; was consulted for a pre-application meeting prior to commencement of the project. Due to Covid 19 the pre-application meeting was held telephonically with Mr. Robert Nemanashi of NWDEDECT on 18 August 2020. The minutes of the meeting dated 21 August 2020 can be found under Appendix G: Other Information.

a. Advertisement and Notice:

The proposed application for a truck stop was advertised for the first time in two newspapers namely Beeld and Klerksdorp Rekord on 28 August 2020. Notice boards were erected on and adjacent to the site and flyers were hand delivered to all adjacent property owners within a 100 meter radius. Stakeholders, adjacent properties and filling stations within the surrounding area were also notified by means of email correspondence. The 30 day advertisement period were from 28 August 2020 to 27 September 2020.

A change of scope took place where a filling station was included in the application. The registered Interested and Affected Parties were notified on 19 March 2021 of the change of scope and was informed that the Basic Assessment Process for the Truck Stop was closed. They were also informed that we will include them when the new application commence. We conducted the public participation for the Truck Stop and Filling Station between 29 March 2021 and 30 April 2021. The proposed truck stop and filling station was therefore advertised in the Beeld on 29 March 2021 and Klerksdorp Rekord on 2 April 2021. All registered Interested and Affected Parties, Stakeholders, adjacent property owners and surrounding filling stations were notified of the change. Notice boards were again erected on and adjacent to the site on 27 March 2021.

Due to some challenges and delays experienced on the project and due to the challenging times of Covid some of the professional specialist studies could only be finalized during 2022. It was therefore thought best, seeing that merely a year passed from the last public participation, to once again advertise the project in the local newspapers, Beeld and Klerksdorp Record, erect notice boards on site, notify all Registered Interested and Affected Parties, Stakeholders, adjacent property owners, filling stations within close proximity to the site of the proposed project simultaneously while the Draft Basic Assessment circulates for comments in order to allow any other party that was not previously registered to now do so. The application

form and Draft Basic Assessment was also submitted to NWDEDECT during this time. The 30 day review period was from 7 April 2022 to 13 May 2022. Numerous comments regarding the Draft Basic Assessment Report was received from Stakeholders; I&APs and NWDEDECT. It was requested by some of the I&APs that certain reports be updated as they felt it was outdated and it was requested that another Draft Basic Assessment be made available to them for comments. Therefore this report serves as a Second Draft Basic Assessment and will once again be circulated for a 30 day comment period prior to the Final Basic Assessment being submitted to NWDEDECT for consideration of the Environmental Authorization. Comments regarding the Second (2nd) Draft Basic Assessment Report can be forwarded directly to the offices of Sapphire Environmental Consulting.

b. Issues Raised by I&APs:

The following concerns were raised by I&APs and other than requests for registration as I&APs the concerns are addressed below.

Table 11: Comments and Responses

Comments:	Response:
Transnet pipeline servitudes are not affected by the proposed work/installations/excavations/connections/construction /road upgrade/development/etc. This wayleave authorisation is valid for thirty six (36) months from today's date – 1 September 2020.	Thank you for your email and prompt response it is appreciated.
Errata email: Transnet pipeline servitudes are not affected by the proposed work/installations/excavations/connections/construction /road upgrade/development/etc. This wayleave authorisation is valid for thirty six (36) months from today's date – 1 September 2020.	Noted
Lectori Salutem, I received notification as to the proposed project of a truck stop on the corner of N12 and Kowie intersection. According to the information I had received, no proper impact study was done concerning the need for such a truck stop. 8 km towards Potchefstroom right next to the N12 highway, a truck stop had been built to service the needs of trucks and their drivers. If that case can be finalised, then the invention of another wheel is unnecessary. There is no need for another gas station, as Stilfontein is already being serviced by 6 gas stations. Over and above the fatal accidents that occur at that intersection, the truck stop will attract many unwanted elements	Thank you for your email and valuable information. You are hereby registered as an Interested and Affected party. We will keep you updated regarding the project throughout the process. We take note of your comment regarding other filling stations in close proximity to the proposed site as well as the need for another truck stop. Our professional team is currently busy with specialist studies to investigate the site as well as the need and desirability. These reports and findings will be included in the Basic Assessment Report. We will provide you with a copy of the Basic Assessment Report once it is available.

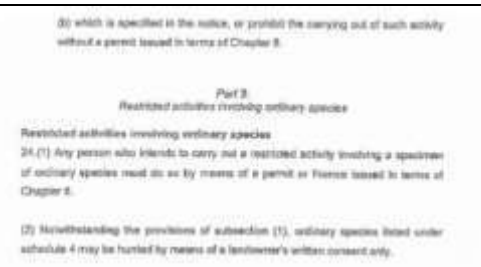
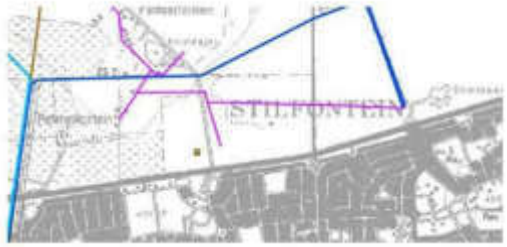
playing their trade to the truck drivers. The other amenities mentioned in the notification, such as, Shops, Diner, Laundromat, etc. are not a necessity at present. Using that road to get to my property everyday and the effect on current businesses in Stilfontein, I don't see the need for another gas station.	The Feasibility Study under Annexure E4 proofed the proposed Truck Stop and Filling Station to be feasible. The site will furthermore be security fenced off and illuminated with 24hour surveillance that will pose to keep any unwanted tresspassers out. The amenities of the Truck Stop and Filling Station is for the convenience of the tired truck drivers in order to get them to refresh and rest in a secure and save area which will in turn keep tired truck drivers of the road decreasing accidents and also assisting with the attitudes of tired truck drivers. It will also pose to keep truck drivers from pulling over next to the N12 highway where they become abstractions to other vehicles on the road which is unsafe and cause accidents. The Traffic Impact Study under Annexure E9 suggest the proposed road upgradings as part of the proposed development.
SANRAL - Kindly find the attached application forms pertaining to your application. Please submit a completed application with required attachments to email nrstat@nra.co.za	Thank you so much for your response as well as the documentation that needs to be completed. We have forwarded the information to the Traffic Engineer as part of the professional team. He will be dealing with these forms and application. Engineers response: The access to the site is not directly of the N12, it is from the side road and therefore it will not be necessary to complete the forms for access off the N12 road.
Please note that all development applications are processed via our online portal; the South African Heritage Resources Information System (SAHRIS) found at the following link: http://sahra.org.za/sahris/. We do not accept email; posted; hardcopy; faxed; website links or DropBox links as official submissions. Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorization Application Process. As per section 38(8) of the National Heritage Resources Act; Act 25 of 1999 (NHRA); an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA. Once all documents including all appendices are uploaded to the case application; please ensure that the status of the case is changed from DRART to SUBMITTED. Please ensure that all documents produces as part of the EA process are submitted as part of the application; and are submitted to SAHRA at the beginning of the Public Review periods. Once all these documents have been uploaded; I will be able to issue	Thank you for your email. We take note of it and will follow your instructions to upload the documents on SAHRIS.

an informed comment as per section 38(4) and 388) of the NHRA.	
I am a property owner with a full view of the proposed Stilfontein Truck Stop and would like to be kept informed of the project in the near and distant future. Will there be any infrastructure improvements to benefit us; such as a robot at the intersection; etc?	Thank you for your email and contact details. We herewith confirm that you are registered as an Interested and Affected Party and will notified and updated regarding the project throughout the remainder of the process. Our office is preparing the Draft Basic Assessment Report which will be made available to you for perusal with the next month or so. Your question regarding the infrastructure and improvements should be addressed in this report. Upgradings will be done as per the recommendations of the Traffic Impact Assessment under Annexure E9 and as per the Services Report under Annexure E7.
I am still awaiting the Draft Basic Assessment Report which was supposed to be available in October. I see that work is being done at the site, so I am wondering what is going on.	Thank you for your email; the information and for following up on the Basic Assessment Report (BAR). Our office is currently awaiting specialist reports form the professional team in order to finalize the BAR. Once the Draft BAR is ready for perusal we will notify you and provide you with a copy and allow you an opportunity to comment. This might only be during the beginning of 2021, however I do not want to make any commitments in this regard. We are aware that the professional team is currently busy with their respective work and studies and know the Geotechnical Report is underway and the Geologist might be busy with testing on site etc. I am unaware of any other work being done on the site. Please may you elaborate on the work being done. We will also follow up in this regard. Please do not hesitate to contact our office should you have any further questions or concerns.
Thank you for your reply. It does not seem that much work has been done. I have noticed that some trees have been cut down, some brush cut and maybe a few piles of dirt brought in; but that could have been there before. There is much activity installing a large meter or more diameter looks like water main; not sure who is doing that and if it will benefit your project or if that is some municipal plan to bring water to some area. They have yet to get to the border of your property, but are close. We residents thought perhaps that was connected to your project?	Thank you for your email and the information provided. We await confirmation form the project team and will provide you with an answer as soon as possible. 7 December 2020 response: We received confirmation form our client and the project team that no construction work was done on the site except for the Geological work. The Geologist was busy with the gravity survey and percussion drilling as part of their Dolomite Stability Assessment on the site the last three weeks. Perhaps this is what you saw; however he

	confirmed that they did not clear any vegetation nor removed any trees form the site. We are also not aware of any services that are being installed adjacent to the site. Hope this answers your question. Please inform us should you note any other movement on the site or should you have any further questions please do not hesitate to contact us.
In reply to your letter, we would like to advise that we have no objection against the abovementioned application as Sasol Satellite Operations will NOT BE AFFECTED. This wayleave is valid for 12 months. Thank you for your co-operation in submitting this request.	Thank you for your letter and confirmation it is noted.
1. The above matter has reference and specifically your advertisement in the Klerksdorp Record declaring the intention for the proposed development of a Truck Stop Facility dated 28 August 2020. 2. We act on behalf of a consortium of Filling Stations in the Matlosana Municipal area (KOSH). 3. In order to address all the concerns of our clients we hereby register in terms of your invitation as advertised as an interested and affected party. 4. All correspondence; notices; applications; full particulars of any and all applications must be as a matter of urgency forwarded and served on my office in order to determine the full scope of the proposed development and to determine the effect and impact of the proposed development not only on the interest of our clients but also the impact on the natural surrounding environment. It is well known that the particular area is under laid by severe problematic Dolomite conditions. 5. As a further major concern please forward the rezoning certificate; alternatively the application or any approvals thereof. 6. Furthermore; as a matter of urgency forward us the Environmental Impact Study related to the application for rezoning and specifically addressing the Dolomite conditions next to the N12 near Stilfontein. 7. Please forward us the full particulars of the Town Planner involved in the application for the rezoning. 8. Please acknowledge receipt of my letter and confirm that we are registered as an interested and affected party. 9. All my clients' rights remains reserved and specifically our right to access further information.	We confirm receipt of your email and objection letter regarding the proposed Stilfontein Truck Stop. You are herewith registered as an Interested and Affected Party and all information as well as the Basic Assessment Report as part of the Environmental process will be made available for your perusal and comment/ objection once it is available. Thank you for your comments regarding the area being dolomitic in nature. Your valuable inputs are noted. We are busy with specialist investigations and await the specialist reports in order to finalize the Draft Basic Assessment. Kindly note that we are only appointed as the Environmental Consultants on the project to follow the necessary environmental processes (in this case the Basic Assessment process) in obtaining the Environmental Authorization for this project and were appointed by the Project Managers; SCS Architects on behalf of the applicant. We are not certain who the Town Planners are; however we are of the understanding that the Zoning Certificate was issued during January 2020. Please contact the Project Manager Ms. Thersia Corrigan; SCS Architects on the following number 011 869 8280 or by email: thersiac@scsarchitects.co.za. You can speak to Thersia Corrigan as they will be able to forward you a copy of the zoning certificate. Should you have any other environmental concern or have any other environmental questions you are more than welcome to contact our office.
Thank you for the notification; however; I do not have records of the first BAR process on our system. Please note that all development applications are processed via our online portal; the SAHRIS found at the following link: http://sahra.org.za/sahris/. We do not	Noted thank you.

accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions. Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorization Application Process. As per section 24(4)b(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA), an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA. Once all documents including all appendices are uploaded to the case application, please ensure that the status of the case is changed from Draft to Submitted. Please ensure that all documents produced as part of the EA process are submitted as part of the application.	
Your wayleave application dated 29 March 2021 has reference. Transnet pipeline servitudes are not affected by the proposed work/ installations/ excavations/ connections/ construction/ road upgrade/ development/ etc. as depicted on your locality and or project site layout plans. This wayleave authorization is valid for thirty six (36) months form today's date – 30 March 2021.	Noted
I have plotted the coordinate of the locality plan in SmallWOrld (our GIS). I have a concern, this side of the N12 is in the Eskom supply aea. Has the developer enquired form Eskom if there is adequate capacity for the size of development they foresee? The Stilfontein Lanza 6.6kV line (in purple) supplies this area and I know it is a problem because this is about the only 6.6kV lie in our Operating Unit and procuring a transformer is a problem. May I suggest that a feasibility study be done to look into the availability of electricity for the development. Just as a precaution the required demand (NMD**) should be determined and see if there is capacity available on Stilfontien Lanza 6.6kV feeder. If not this could influence the cost of this development should there be no capacity available. ** Initial selection of notified maximum demand (NMD) 1.1.1. The NMD will be the maximum capacity in KVA, as measured over a 30-minute integrating period, per point of delivery/ premise (POD) that the customer will	Noted The applicant and Eskom had a meeting and an application is underway.

contract form Eskom to make available during all time periods.	
In reply to your letter, we would like to advise that we have no objection against the abovementioned application as Sasol Satellite Operations will NOT BE AFFECTED. This wayleave is valid for 12 months. Thank you for your co-operation in submitting this request.	Thank you for your comments and confirmation we take note of it.
Since I am personally aware of the existence of dwarf mongoose in that area I will be informing and requesting a relative assessment to determine weather or not you are in violation of the protected species act of 2016. I have attached the protected species gazette and will inform you of the response from the relevant department to determine when they can make an assessment of the natural habitat in close proximity to Erf 3675.	Based on the information received, this will be included in the Ecological report to be considered by the Department during the decision-making process to ensure your concern has been taken into account. The North West Biodiversity Management Act is the provincial act applicable to the North West. The Dwarf Mongoose is listed in Schedule 2 as "specifically protected". The Dwarf Mongoose is not nationally protected or red listed. However, it should be noted for clarity that the Act aims to regulate direct actions, such as hunting, breeding, translocation, game farming, capturing, rehabilitation of or killing, import or export and related activities: **Restricted activities involving listed specially protected species** 15.(1) Any person who intends to carry out a restricted activity involving a specimen of listed specially protected species must do so by means of a permit issued in terms of Chapter 8. (2) Permits contemplated in subsection (1) may differentiate between different categories of applicants and may impose different validity periods. (3) No person may import, introduce into the province from another country, export or re-export from the Province to another country a specimen of any listed species in the Appendices of the CITES without a permit issued in terms of Chapter 8. Prohibited activities for species listed include: **Prohibited activities involving listed species** 23.(1) The following are prohibited activities involving listed species – (a) the hunting of listed species, that is a canned hunt; (b) the hunting of listed species in an intensive wildlife management system; (c) the hunting of listed species under the influence of any tranquilising, narcotic, immobilising or similar agent; (d) the hunting of listed species released in an area adjacent to a holding facility where listed species are bred; and (e) the hunting of listed species by making use of a gin trap; (f) the hunting of listed species, unless the owner of the land on which the animal is to be hunted provides an affidavit or other written proof indicating the period for which the species to be hunted has been on that property, if that species was not born on that property; (g) the breeding in captivity of listed large predator, White rhinoceros (*C simum*) and Black rhinoceros (*D. bicornis*), unless the prospective breeder provides a written undertaking that that such species will not be bred, sold, supplied or exported for hunting activities that are considered prohibited activities in terms of paragraphs (a) to (e) of this subsection; (h) the carrying out of any restricted activity contemplated in sections 15 and 24 without a permit issued in terms of Chapter 8. (2) In addition to the prohibitions contemplated in subsection (1), the responsible Member may, by notice in the Gazette, prohibit the carrying out of any activity – (a) which is of a nature that may negatively impact on the survival of a listed species; and

	 The applicant does not intend to engage in any of the above mentioned activities, nor engage at any stage with the wildlife in the area or negatively impact the general survival of the species. The sensitivity of the grassland has however been rated as High, based on the composition of species found to occur. That being said, impacts have been rated as Low or Medium residual impacts since impacts can be mitigated. That being said, the occurance of the dwarf mongoose will be included in the report to ensure it is considered as a concern from an Interested or Affected party.
I have plotted the coordinate of the locality plan in SmallWorld (our GIS).  I have a concern, this side of the N12 is in the Eskom supply area. Has the developer enquired from Eskom if there is adequate capacity for the size of development they foresee? The Stilfontein Lanza 6.6kV line (in purple) supplies this area and I know it is a problem because this is about the only 6.6kV line in our Operating Unit and procuring a transformer is a problem. May I suggest that a feasibility study be done to look into the availability of electricity for the development. Just as a precaution the required demand (NMD**) should be determined and see if there is capacity available on Stilfontein Lanza 6.6kV feeder. If not this could influence the cost of this development should there be no capacity available.	Thank you for your email and valuable information. We will forward your comments to the project Engineers in order to respond to your comment. Once we are in receipt of their response we will provide you with an answer. Trust you find the above in order. A discussion took place between the Applicant and Eskom and an application is now in process.

** Initial selection of notified maximum demand (NMD) 1.1. 1. The NMD will be the maximum capacity in kVA, as measured over a 30-minute integrating period, per point of delivery/premise (POD) that the customer will contract for Eskom to make available during all time periods.	
Please note that all development applications are processed via our online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: http://sahra.org.za/sahris/. We do not accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions. Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorisation Application Process. As per section 24(4)b(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA), an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA. Once all documents including all appendices are uploaded to the case application, please ensure that the status of the case is changed from DRAFT to SUBMITTED. Please ensure that all documents produced as part of the EA process are submitted as part of the application.	Thank you so much for your email. We will upload the Draft Basic Assessment report onto the SAHRA website once it is finalized and ready for circulation and comments.
This email is an acknowledgment of receipt for your enquiry. Please note that in line with requirements of Section 29 of the Spatial Planning and Land Use Management Act (Act No 16 of 2013) read with Section 3 of the Promotion of Administrative Justice Act (Act No 3 of 2000) SANRAL have 30 days to acknowledge receipt of your application and 90 days to evaluate and provide response within 90 days.	Thank you so much for your email. We take note of the contents and look forward to your response.
SANRAL - Kindly complete the attached Res and Service Facility application form.	Kindly note that access will not be directly from the N12 but from Kowie Street.
The second notification I received from your office has once again indicated that no thorough survey was initialized to study the impact on the current garages in Stilfontein. The paragraph below is only a red herring to divert the attention away from the building of an excess garage that is definitely not required at this point in time. The current economy does not accommodate this proposed truck stop.	Thank you for your comments regarding the proposed Stilfontein Filling Station and Truck Stop. Apologies for the long delay in responding to your email. It is uncertain how but for some or other reason we noted that our email in response to your email did not go through and was not sent. Apologies in this regard.

Project Locality: The property is situated on Erf 3675 Stilfontein Ext 7 which also forms the north west corner and intersection of the N12 (Joe Slovo Road) and Kowie Street. Loxton Street forms the northern boundary with Du Plessis Street forming the western boundary in Stilfontein Ext 7. Klerksdorp is approximately 11,5km to the west with khuma approximately 10,5km south east; Orkney approximately 17 km south west and Potchefstroom approximately 36 km east of the site. "An owner" of a large trucking business outside Potchefstroom, indefatically stated that to build another truck stop so close in proximity to Klerksdorp is not viable. Stilfontein has 6 garages at present, which is an overkill for the size of the town. The old truck stop outside Stilfontein, could be looked at again, but the upgraded truck stop outside Potchefstroom has the necessary amenities that are required by the truckers. Another one at a crossing where there is a high accident rate is definitely not required.	In response to your comment we requested our Engineer who is responsible for the Feasibility Study to provide an answer. Herewith the answer. If one looks at the number of Trucks/Heavy Vehicles on the N12, passing Stilfontein (and the site) – as per our recent Traffic Count - it is more than 2,800 per day (in both directions). The current Fuel Facilities next to the N12 near Stilfontein and Klerksdorp only Intercepts a relative small percentage of these 2,800+ Heavy Vehicles/Trucks on the N12 passing the Site. Therefore there is still a very Large Number of Trucks (Estimated at over 2000/day) that do not Stop at Stilfontein or Klerksdorp and can be Intercepted by the proposed Truck Stop Facility at Stilfontein. With the Expected Interception Rates of Heavy Vehicles/Trucks in total (Combined) of 3% on the N12, for the Proposed Site, there is more than enough other passing Trucks (97% that will not be Intercepted by the Proposed Site) on the N12 Passing Stilfontein and Klerksdorp – and this Percentage of the Heavy Vehicles/ Trucks will still be available for the existing facilities to intercept trucks from.
Thank you for your letter. However, the engineer that did the vehicle count cannot say that the proposed truck stop will affect the business environment of Stilfontein. I have spoken to quite a number of shop and garage owners who are very dependent on their businesses for day to day survival. The vehicle count on the N12 is no indicator of the effect on the CBD business. The high accident rate is another factor that has not been taken into consideration. There are other factors I had mentioned previously which has not been considered or taken cognizance of. The truck stop 8 km down the road towards Potchefstroom is a factor that should be utilized and there is definitely no need for another truck stop along the N12 in close proximity to Stilfontein. There are more than enough petrol stations in Stilfontein. The bigger picture of Stilfontein's economy is not being taken into consideration. It seems to me that only self-interest is being addressed.	Thank you for your email and response. Our office captured your comments on our comment and response data sheet and will revert back to you with an answer once it's finalized and available. Trust you find the above in order. The current filling stations around the proposed development has an established marked whom they currently serve. According to the Feasibility Study the impact of the proposed truck stop and Filling Station will be between 5% and 10% (most affected site being Sasol Goudkop), but will be able to recover most of the lost sales within 5 years after the proposed truck stop and filling station is constructed. The Feasibility study based their findings on the calculations of the inception rates, traffic count and growth in the Stilfontein area. From a Feasibility point of view the proposed application was found to be feasible. Please refer to the Feasibility Study under Annexure E4. The Traffic Impact Assessment made recommendations of upgradings as part of the proposed development. The situation with the high

	accident rate stems mainly from built up water coming from the impoundment situated outside the boundary of the proposed site. We are aware that the City of Matlosala visited the site as a pipe had burst which caused a lot of water and the impoundment of being overflowing. Please refer to Annexure E9 for the Traffic Impact Study. Kindly note that the stormwater from the proposed site will be directed away and to the east of the site. Proper stomwater mitigation measures needs to be implemented for the proposed project. There is a dip on the N12 adjacent to the impoundment which is situated outside of the boundaries of the proposed site. It seems that this is the cause for the water traversing and ending up on the N12. We understand that this is a critical problem currently. Therefore it was thought best to divert the stormwater completely away from the impoundment and in the complete opposite direction to the east of the site. The City of Matlosana will have to investigate the current matter which is causing numerous accidents. We know that they were out to the site earlier this year as they contacted our office to get access to the adjacent site. We provided them with contact numbers of the neighbouring property owners. Therefore the Municipality is well aware of the current situation. It is advised that you bring his matter under the Municipalities attention again and keep following up with them until a resolution is found.
The above matter as well as your email of 6 April 2021, refers. We would like to enquire when the Draft Basic Assessment Report will be made available. We await your reply in this regard.	Thank you for your email and inquiry. Kindly note that we await specialist reports from the professional team in order to finalize the Draft Basic Assessment report. We will definitely inform you once the Draft Basic Assessment is ready and available for perusal. Trust you find the above in order. Please do not hesitate to contact our office should you have any other queries in this regard.
Thank you for taking my call this morning. With reference to our telephone conversation, this mail is to the above subject line project Name: Stilfontein Filling station and Truckstop, we raise the following objectives to this process. As the project Manager of Lion Pride Truckstop I confirm the following; we are currently in the process of implementing all the processes to build this	Thank you for your email and objection. We herewith confirm your registration on behalf of Lion's Pride Truck Stop as an Interested and Affected Party for the Stilfontein Truck Stop and Filling Station.

project that's situated on 3 sites namely: ERF 3674, ERF 3676 and Remainder of Portion 39 Palmietfontein 403 IP in Stilfontein. We have engaged in meetings with the Town planner at City of Matlosana Mr Shibiti and The Director of Local Economic Development City of Matlosona Northwest Mr Lucky Fourie and both departments support this project of ours. We are currently in phase 1 of project and have submitted our application to the offices of Sanral for approval of the slip road off the N12 from Klerksdorp to the Lions Pride Truckstop. We have the proposed access management layout conceptual drawings on file and have engaged with all parties that's involved on this project. With regards to our Environmental rights could you please guide us with processes we need to follow in order to meet all requirements for the project to not put on hold. We looking forward hearing from you.	
Sorry Ms Agenbacht , I forgot to mention that the 3 sites combined 165289 hectare , sufficient to build a truck stop, accommodation, restaurants, workshops and storage facilities . Trust you find all the above in order. looking forward to hear from you	Noted.
We had a management meeting yesterday to discuss the matter and we want to bring the following under your attention. We have put in the application for Wholesale License and NOT for the filling station, therefor your client can apply for Filling Station License as these are two different operation entities. We also want to make your client aware that we as the board are open to meet with them to see if we could rather work together to benefit both parties. This project is so important to us as it will benefit the community of Stilfontein and both of us.	We take note of your request to meet with the owners of Erf 3675 Stilfontein Ext 7. We will forward your email to them. A meeting between the applicant and Kennith Molefe Holdings took place on Monday, 25 April 2022 in Klerksdorp.
Your wayleave application dated 07 April 2022 has reference. Transnet Pipelines, a division of Transnet SOC Limited, is not affected by the proposal. Your awareness of the existence of Transnet's pipeline servitudes and concern for their integrity is highly appreciated. This authorisation shall be valid for 48 months from the date - 07 April 2022.	Noted.
Thank you for the notification. I have forwarded it to the Environment Practitioners for their perusal.	Thank you so much for your email and correspondence. It is greatly appreciated.

From my side, I think I may have responded to correspondence on this matter previously but I just want to bring to the attention of the applicant. This development falls within the Eskom supply delivery area and electricity would therefore have to be supplied by Eskom. The feeder in this area is the Stilfontein Town - Lanza 6.6kV line as shown in the extract below. My concern is the applicant should enquire Eskom if there is spare capacity to fulfil his requirements. Secondly the voltage of this line is 6.6kV which is not commonly used in Eskom and therefore a transformer may not be readily available on application. This could affect the timelines for this development.	We have received your previous consideration. A meeting between the developer and Eskom took place whereby Eskom confirmed that they will be the service provider for electricity to the site. They also provided the developer with an application form. Therefore discussions are underway at this stage. You may also peruse the Draft BAR for more information regarding the project should you wish to do so and provide us with additional feedback. The Draft BAR will be made available via WeTransfer shortly.
Dir. LSM of the Department of Agriculture Land Reform and Rural Development have gone through the contents of the Basic Assessment regarding the proposed development mentioned above on Erf 3675 Stilfontein Ext 7 within the City of Matlosana Local Municipality. From a Conservation of Agricultural Resources Act 43 of 1983 point of view, there are no aspect of concern because the area to be disturbed is not economically viable base on its agricultural production potential. The development is given a go ahead however the developer should ensure that soils erosion around the edge of the development area is combated	Thank you for your prompt response. We take note of your comments.
The consultation letter and a copy of the Draft Basic Assessment is hereby referred to: The Department of Water and Sanitation has no objection towards the proposed project on condition that the following is adhered to: 1. The developer should ensure when a new filling station is set up; and the tanks and underground system are being installed; that a clay layer and concrete slab is placed underneath the equipment that are installed underground. The sequence from the bottom for the above-mentioned is in situ rock – clay layer – concrete slab – sand – storage tank. 2. The area used for the storage tanks must be bunted to contain spills at the site; the bund wall must be 110% of the capacity of the tank to be installed. 3. A commitment from the operator/ developer to remove all of the equipment that are installed underground in the event of closing the site and or ceasing operation is critical.	Noted. Noted. The Developer will ensure that when the tanks and underground system are being installed; that a clay layer and concrete slab is placed underneath the equipment that are installed underground. The sequence from the bottom for the above-mentioned is in situ rock – clay layer – concrete slab – sand – storage tank. DWS specifications above will be adhered to. The area used for storage tanks will be bunded to contain all spills on site; the bund wall will be 110% of the capacity of the tank to be installed. DWS specifications above will be adhered to. It is not envisaged that the site will close or be demolished. However should this be the case all equipment underground will be removed in such a manner to ensure that no spillages takes place etc.

4. The developer should supply DWS; Free State Region with the depth of the groundwater level in the area; as the installation of tanks below the groundwater level or in contact with the groundwater is not permitted.	According to the Geohydrological Assessment the on-site depth to water table is 25.30m below surface. Please refer to Annexure E5 for the Geohydrological Assessment. The underground tanks will be installed between 3.5 and 4m below ground and as per requirements by pump and tank specialists. The placement of the tanks will not interfere with the water table.
5. Groundwater monitoring should commence before any development in order to become familiar with the groundwater situation. The groundwater monitoring will aid operators to determine their liability with regard to pollution claims that might be received from the public and or government departments.	Groundwater monitoring will again be done prior to the construction phase to familiarize ourselves of the groundwater quality. This will then be done at a regular basis (6 month intervals) in order to ensure not spillages or pollution takes place.
6. Groundwater monitoring should be performed at 6 monthly intervals and analyzed for the wide spectrum macro elements; including hydrocarbons. The developer can contact DWS: Free State Region for advice regarding the number and positions of the monitoring boreholes; as it is site specific.	Groundwater monitoring will take place on regular intervals (6 month intervals) as also recommended in the Geotechnical study, Dolomite Stability Assessment and the Dolomite Risk Management Programme. Please refer to Annexure E – Specialist studies.
7. The developer has the opportunity to motivate why groundwater contamination would not occur at the site and that no other groundwater users in the area would be affected; by performing a full Geohydrological Environmental Impact Assessment of at least a one-kilometer radius around the site.	Please refer to Annexure E5: Geohydrological Assessment and E6 Geotechnical Study and Dolomite Stability Assessment. Strict measures should be in place along with regular inspections done by a suitably qualified Engineer to ensure that no groundwater contamination takes place. As the site is prone to dolomite it is essential to adhere to all the recommendations of the specialist reports in order to ensure no sinkholes form etc. On site; contaminated water will be handled separately from other runoff. The water through the grid inlets to the forecourt as well as the bunded areas will be treated by oil separators and sediment traps. The services designs will therefore ensure that contaminated water do not mix with the normal rain surface runoff.
8. The applicant must ensure the stormwater run-off has to be directed away from the site to ensure separation of clean and dirty water.	Please refer to Annexure E7: Engineering Service Information. Stormwater will be diverted to the eastern corner of the site.
9. The plant should be sited; designed and managed so that the quality of the surface and groundwater in the vicinity are not degraded by run-off; leaching or seepage from the site or waste utilization areas.	On site; contaminated water will be handled separately from other runoff. The water through the grid inlets to the forecourt as well as the bunded areas will be treated by oil separators and sediment traps. The services designs will therefore ensure

	that contaminated water do not mix with the normal rain surface runoff. The forecourt and bunded areas will be fitted with oil separators as well as sediment traps to prevent any contamination. The runoff to the forecourt area will not be handled as surface flow flowing away from the building but will be caught and treated through the separators to prevent possible contamination.
10. No activities may take place; without the necessary authorization from this Department; within a horizontal distance of 100m from any watercourse or estuary or within a 500m radius from a delineated boundary of any a wetland or pan.	Noted. Please refer to the Wetland Identification report also included under Annexure E2 of the Draft Basic Assessment Report. In the Wetland Identification report Terra Soil Science confirmed that no natural wetland occurs on the site as the impoundment which is situated outside the site boundary and to the west of the site is a man-made structure. No soils with redoximorphic features were found on the site. The vegetation that is currently associated with the impoundment is dominated by Eucalyptus trees with wetland vegetation occurring within the permanently inundated sections. As stated earlier in the Wetland Identification report, these are man-made signatures and as such do not adhere to the definition of a wetland in the NWA (section 4.1 of the report). New information regarding services has become available since the Draft Basic Assessment Report was circulated for comments. It is understood that the stormwater will be diverted away to the east of the site. No water will be attenuated or diverted to the impoundment to the west.
11. Zero discharge of contaminated surface water.	All services which also includes the stormwater run-off and wet services are designed by professional Engineers and all designs will comply to the SANS 1936 Development of Dolomite land.
12. Monitoring must take place on a continuous basis to ensure the above.	Continuous monitoring will take place by a suitably qualified Engineer to ensure no contamination or pollution takes place on the site. It is also suggested that NWDEDECT make this a condition in the Environmental Authorization.
13. The applicant must comply with all the conditions of the National Water Act (Act 36 of 1998) (NWA).	The Applicant will comply with all the conditions of the NWA.

14. Registration of water uses under Section 21 of the NWA is compulsory. In terms of Section 22 of the NWA a person may only use water without a license: • If that water use is permissible under Schedule 1; • If that water use is permissible as a continuation of an existing lawful use. • If that water use is permissible in terms of a General Authorization issued under Section 39 of NWA. 16. In terms of Section 4(1) of the NWA a person may use water from a water resource for purposes such as reasonable domestic use; domestic gardening; animal watering; fire fighting and recreational use; as set out in Schedule 1. To apply for authorization and registration of water uses the responsible official can be contacted at the following address: Deputy Director: Water Use Attention: MR. V Blair Private Bag 528, Bloemfontein 9300 Telephone: 051 405 9000 For any clarity; please do not hesitate to contact this Department.	New Engineering information became available since the submission of the Draft BAR. Service connections (water) will take place from existing municipal pipe lines and the sewer will either be pipe jacked under the N12 to connect to the Municipal system or alternatively a Septic Tank is suggested by the City of Matlosana Municipality. Noted thank you.
As per telephonic discussion For Consultation with the DWS Free State Regional Office Upper Orange and Middle Vaal kindly send the documents as follows: Dr T Ntili Provincial Head: Free State Department of Water and Sanitation Private Bag 528 Bloemfontein 9300 Attention: Director: RCE For courier the physical address is as follows: Dr T Ntili Provincial Head: Free State Department of Water and Sanitation 2nd Floor Bloem Plaza Building Cnr Charlotte Maxeke and East Burger Street Bloemfontein 9300 Attention: Director: RCE You may get clarity on all water use authorization and registration matters from Mr Vernon Blair Tel: +27(0) 51 405 9000	Thank you so much for your time this morning and for the email response. It is greatly appreciated. We take note of your email and will continue to discuss the proposed Stilfontein Truck Stop and Filling Station with Mr. George Nel.

Cell: +27(0) 82 807 3552 E-mail: blairv@dwa.gov.za Kindly send both hardcopy and disc documents. If the project happens to fall outside of the Water Management Area of the Free State Provincial Operations office, you will be notified of the contact details for the relevant DWS Office. On the matter of the Stilfontein Truck Stop and Filling Station project you may proceed to discuss further with George and Byron regarding the WUL requirements and make relevant arrangements with them with regards to the 'identified' wetland/water course.	
In reply to your letter, we would like to advise that we have no objection against the abovementioned application as Sasol Satellite Operations will NOT BE AFFECTED. This wayleave is valid for 12 months. Thank you for your co-operation in submitting this request.	Noted.
One of the registered I&APs commented as follows: Attached find a letter from Lofdal Christian School Proposed for the above subject on hand, am not sure if you have seeing it. We will discuss in Monday meeting. Looking forward to see you all Monday at 12H45.	Thank you for your email as well as the letter. We take note of the letter and expect that the School will formally submit their letter to our office in due course.
Unofficial comments by [redacted] School: It has come to our attention that Lesedi La Ka Trading and Projects CC has proposed to build a truck stop and filling station at the front of our premises. From our recent school board meeting's, we have the following concerns for the parents and learners; • Increased traffic to enter and exit the school premises during and after construction; • Safety and security of our learners would be jeopardized by the increased volumes of traffic;	Even though this comments were unofficially submitted to our office we will still address it. Noted. Traffic during the construction phase is not expected to be that much more and will strictly be controlled by the Environmental Management Plan. Work may only be done during working hours from Monday to Friday from 6:00am to 18:00pm and on Saturdays from 7:00 to 14:00. The Traffic Impact Study under Annexure E9 proposed upgradings for the proposed development which will assist with the additional traffic load during the operational phase. The following mitigatory measures are deemed necessary to ensure safe and efficient traffic flow to and from the site, during construction: - Posting of relevant traffic signage where construction will take place (to inform motorists of construction vehicles); - Adequate parking shall be provided on site, to accommodate construction vehicles; and - No vehicles should be parked in any public road reserve, at any time.

• Increased noise levels during and after construction;	The proposed development will generate noise during the construction and operational phase but the noise levels will conform to the National Noise Regulations. The noise generated will be within the generally acceptable noise levels; between 45 to 65 dB(A). South African Noise levels are measures; controlled and regulated by the following legislation: • SANS 10103:2003 (SABS 0103) • National Noise Control Regulations (now replaced by provincial regulations) and • SANS 10117:2003.
• High air pollution in terms of dust;	Dust pollution can be minimized by regular damping down of working areas; especially during the dry and windy seasons; in order to minimize and/ or avoid dust pollution that can cause a nuisance to adjacent properties and residents. The site is situated next to a gravel road and therefore damping down will definitely be required during the construction phase to avoid and or minimize the dust pollution. It is suggested that the gravel road and construction area be damped down with water at least twice a day.
• Hazardous liquid spills caused by tankers; leaking trucks; etc. can cause underlining health issues for the learners.	Mitigation measures as per in the EMPr: • Hazardous storage and refueling areas must be bunded with an impermeable liner to protect groundwater quality. Bunded areas must have a capacity of at least 150% of the volume of the container storing the substance. Bunded areas to be constructed of concrete blocks lined with suitably dense plastic sheeting. Refueling/ hazardous material decanting areas can be protected with a portable metal sheet having a lip on all sides sufficiently high to contain potential spillages. • Fuel and oil storage tanks must meet relevant specifications and be stored on an impermeable base with an oil tight bund. Fuel tanks shall be elevated so that leaks may be easily detected. • Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity. • Storage areas containing hazardous substances/ materials must be fenced, clearly demarcated and required signs displayed. These areas are to be kept under lock and key.
For the above-mentioned reasons; [redacted] School would like to oppose the proposal for a Truck Stop and Filling Station.	Noted.

We would appreciated your support by kindly completing; signing and returning the form on the reverse side of this document by no later than 22nd April 2022.	This petition was never received formally from the school.
This is the second time there has been an attempt to build a truck stop at the site mentioned in your letter above. No proper environmental study has been carried out to ascertain if there really is a need for the facilities as mentioned in your letter on erf 3675 at Stilfontein. The truck stop and facilities mentioned are not a need or requirement at that erf at this point in time. There are sufficient established filling stations in Stilfontein at present. With the current economical crunch the country is experiencing at present, there definitely is not a truck stop required there at present. Eight kilometers down the N12 towards Potchefstroom, there are the required amenities inplace for a truck stop. Eighty-five percent of the building have been erected and that has to be explored and utilised for such a business. It is an ideal distance off the N12 to ensure that vehicles entering and departing have the necessary view of the traffic in that area. The current community does not require a truck stop and shopping facilities at that erf 3675. The truck stop will draw prostitutes and other unwanted elements to that site. That is a high accident zone at present and the school children being brought to school and fetched at said times of the day will enhance the accident rate further with trucks and other vehicles moving in and out of the truck stop. The CBD of Stilfontein is dependent on the influx of vehicles and people for their day to day living. The truck stop and filling station is an unnecessary and unwanted business.	Thank you for your email and comments regarding the proposed Stilfontein Truck Stop and Filling Station. Due to some challenges during the Covid period some of the specialist studies could only be completed early this year. Therefore the reason for the additional Public Participation and notification of the project. Kindly note that the Draft Basic Assessment was also made available for review from 7 April 2022 until 13 May 2022. We have made a WeTransfer link available for a couple of times already. The Draft Basic Assessment Report can be downloaded from the WeTransfer link. Unfortunately the WeTransfer link is only available for a period of 7 days. Therefore we committed to make a new link available every 7 days. Please confirm if you have been able to download the WeTransfer link. I make a new link available to you for downloading. Please use the link below to download the report: Download link https://we.tl/t-2afS88fQ87 We have taken your comments into consideration and want to draw your attention to the fact that numerous specialist studies were conducted to confirm if the site will be suited and feasible for a Truck Stop and FIlling Station. All of these studies are also available as part of the annexures of the Draft Basic Assessment Report. As per our previous communication with you we have appointed a suitably qualified Engineer to conduct a Feasibility Study to confirm if a Filling Station and Truck Stop will be feasible at this property. You may please refer to the Feasibility Study under Annexure E4 and Annexure E9 for the Traffic Impact Study. According to the Feasibility Study the impact of the proposed Truck Stop and Filling Station will be between 5% and 10% (most affected site being Sasol Goudkop), but will be able to recover most of the lost sales within a 5 year period after the proposed Truck Stop and Filling Station is constructed. The Feasibility Study based their findings on the calculations of the inception rates; traffic count and growth in the Stilfontein area. From a Feasibility point of view the proposed application was found to be feasible.

	Kindly also refer to the Traffic Impact Study under Annexure E9 as a couple of upgrades are proposed by the Traffic Engineer. Please feel free to contact our office should you have any further questions or comments. You are more than welcome to provide our office with additional comments once you have read through the Draft Basic Assessment Report and Specialist studies under Annexure E. Trust you find the above in order.
We herewith register as an Interested and Affected Party to the subject Environmental Basic Assessment process on behalf of [redacted] and associated business partners affected by subject application. 2. My clients have vested interests along route N12, and we request the following information for assessment to further comment in this respect. 2.1. Background Information Document. 2.2. Draft Basic Assessment for perusal and comment. Once received we will be in a position to elaborate and comment. 3. Primary concerns but not limited hereto, are that various similar facilities are prominent along the N12 in the same area of influence. 4. It is expected that the EIA application must, comprehensively address the socio-economic impact on similar facilities within the same area of influence. 5. Subject application outcome will detrimentally affect my client's interests and other similar facilities in the area of influence and along the N12. 6. We await your reply confirming our registration as I&AP in this regard. 7. It is imperative that you acknowledge receipt of this document and await future correspondence regarding the proposed development.	Thank you for your email and comments regarding the proposed Stilfontein Truck Stop and Filling Station. We herewith confirm your registration as an Interested and Affected Party on behalf of Engen Petroleum Limited. A WeTransfer link was emailed to you in order to download the Draft Basic Assessment Report. For ease of reference the link was made available below again. Comment Noted. Please refer to Annexure E4 – Feasibility Report. The specialist report found the proposed development to be feasible and viable. Comment Noted. Please refer to Annexure E4 – Feasibility Report. Comment Noted. Registration as I&AP confirmed. Receipt of your comments/ objection confirmed. We will keep you updated regarding the proposed project throughout the remainder of the process. Kindly note the 30day comment period for the Draft Basic Assessment Report is from 7 April 2022 to 13 May 2022. Please do not hesitate to contact our office should you have any further questions in this regard.
The District Municipality has received your letter dated 1st April 2022 requesting comments on Draft Basic Assessment Report for the above mentioned proposed	Thank you for your comments on the Draft Basic Assessment Report.

establishment of a truck stop and filling station. Kindly find the following comments for your consideration: 1. Adhere to Dr. Kenneth Kaunda District Municipality: Air Quality Management By-laws; 2012; 2. Adhere to Dr. Kenneth Kaunda District Municipality: Noise Control By-Law; 2012; 3. Ensure compliance with all relevant environmental legislation in all stages of the project; 4. Final Basic Assessment Report and Environmental Management Programme of this project should be sent to the Dr. Kenneth Kaunda District Municipality after approval.	Answer: 1. The Air Quality Management By-Law of Dr. Kenneth Kaunda District Municipality will be adhered to; 2. The Noise Control By-Law of Dr. Kenneth Kaunda District Municipality will be adhered to. 3. All environmental legislation will be complied with throughout all stages of the project. 4. A copy of the Final Basic Assessment Report and the Environmental Management Programme will be forwarded to you for comment once it is ready and available for distribution.
We object against the proposed project based on the following: 1. "Prevent impacts from reaching downstream water resources by ensuring installation and proper functioning of stormwater management systems, which should include oil traps." Objection: Based on the mitigation measure provided it is also imperative for the applicant to prove through a rational design by a competent person how they plan to deal with storm water seepage into the under-ground water or run off towards the wetland. We therefore request same. It is evident from the recent heavy rainfall that the wetland and down stream should be properly managed. With the heavy rains the past season all storm water went over the N12 and is currently still an issue. We believe a dedicated storm water management plan should be compiled and circulated for input. We also need further information what will be done with the affluent which will be captured by the oil traps? Will it be removed from site or will it be dispersed into an onsite sewage system which will also contaminate the underground water source? Will the facility be linked to a municipal sewage system or will they make use of a septic system with a French drain?	Thank you for your prompt response and objection. We herewith confirm receipt of your objection. We will formally respond to your email in due time. In the meantime please refer to the Wetland Study and Fauna and Flora Study under Annexure E: Specialist Reports - Annexure E1: 1 > Terrestrial Biodiversity Impact Assessment and Annexure E2: 2 > Wetland Identification and Site Assessment. 1. The site will be filled with GI7 material (Natural Gravel), to ensure suitable drainage slopes. The figure below shows the location of the "impoundment" (to the west outside the boundary of the site) and the direction of runoff for the Truck Stop and Filling Station. The stormwater will be managed through surface runoff; channels; and stormwater pipes. The site will manage runoff to a Filed Inlet where it will drain into a pipe. There is a connection point just east of Kowie Street, where the proposed pipeline will connect to.  The total pipe length for the Stormwater system is noted as:

	• 450 Ø mm = 11 m • 450 Ø mm = 53 m Total = 64 m Please refer to Annexure E7 for the Services Report. No water will be attenuated or diverted to the "impoundment" outside the boundary and to the south west of the site. There are two options for the sewer namely a municipal connection however; it will need to be pipe jacked under the N12. Option 2 is for a Septic Tank as per the letter received from the City of Matlosana Municipality (Annexure G3) and the Engineering Services Report under Annexure E7.
2. "It is requested that the Department of Water and Sanitation comment on this Basic Assessment Report. It is not expected that a Water Use License will be required; however should it be required the necessary process and procedures will be followed." In Government Notice 509 of 2016: General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act 36 of 1998) For Water Uses As Defined in Section 21(c) or Section 21(i), the "regulated area of a watercourse" is defined as follows: (a) "The outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; (b) In the absence of a determined 1 in 100 year flood line or riparian area, the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act); (c) A 500m radius from the delineated boundary (extent) of any wetland or pan" Objection: Based on the applicant's own version the development will take place within 500m from an existing wetland, thus we believe point c is applicable and that the department cannot consider the BAR before Department of Water affairs approve of a Water Use License as prescribed in the regulations. We further don't see any reference within the BAR by a competent specialist whom evaluated the wetland fauna and flora and conducted a wetland delineation.	2. A Wetland Investigation and Site Assessment was done and the report is attached under Annexure E2. The Biodiversity Report is attached under Annexure E1 as previously corresponded. Kindly note that the Wetland Specialist clearly explains in his report that there is no wetland adjacent to the site; rather an impoundment that was excavated and is currently being used to accommodate what appears to be stormwater runoff or similar water (page 19 of the Wetland Identification and Site Assessment Report). This can be confirmed by an email received from the project Engineer stating the following: "I believe the impoundment/ pit currently located to the south east of the site is man-made. When communicating with the municipality; they noted that there is a pipe from the south side of the N12 that drains into that impoundment/ pit." The Wetland Specialist furthermore wrote in his report "from the soil, land surface and historical conditions of the site (as identified earlier) the only conclusion is that there is no natural wetland present on the site. The impoundment is a man-made feature and the soil conditions do not indicate the presence of any natural wetland conditions." The Engineer and Wetland Specialist furthermore confirmed that the site does not fall in any 1:50 or 1:100 year floodline and there are no wetland/ river or stream on or adjacent or in close proximity to the site. Please refer to Annexure G6 for an email from DWS confirming that they are in agreement with the Wetland Report and that this man-made

	structure is an impoundment and No Water Use License is required. Therefore the 100m and 500m radius from a wetland does not apply to this site and a Water Use Application in terms of Section 21 (c) and (i) water use will not be required in terms of the National Water Act.
3. Feasibility Study conducted by EDL Consulting Engineers Objection: The feasibility study presented is fatally flawed, since it did not consider TWO new filling stations which is already in the development stages, one being the Matlosana Total and the second being Gumtrees Engen. Should the engineer consider these two new sites already approved by the Department of Minerals and Energy we believe that this site would have rendered unfeasible. We therefore request that the feasibility study be updated and this very relevant information be incorporated into the engineers calculations and the BAR. Department of Minerals and Energy Site & Retail Licenses attached.	3. Your comment was considered ant the Engineer updated the Feasibility Study to also include the two new filling stations. Please refer to Annexure E4 for the Feasibility Studies.
We have a vested interest in the area, we have already acquired all development rights (Zoning, Site & Retail License, building plans etc etc) for the development of a similar facility on Portion 1 of the Farm Gumtrees 589, we have already cleared our site and will start with construction soon. We believe it is in your client's best interest to allude them to this fact since it will impact their feasibility drastically. We believe you find the above mentioned in order and await your detailed response, we reserve the right to elaborate on our objection when above mentioned information is received.	Noted. Thank you for your comment. The Feasibility did take both the filling stations into consideration in the updated report dated June 2022. The Feasibility study states the following on page 10: "Total Matlosana – Approx. 4.86 km from the site (Travel distance): This future filling station is situated at the Matlosana Mall on the southern side of the N12 near the intersection of the N12 and the Matlosana Mall Road. This filling station is under construction as of May 2022. This filling station will intercept a large portion of its customers form the Matlosana Mall traffic and a small percentage form the N12 passing traffic. This filling station will have access from the access road to the south of the filling station and will not have direct access from the N12." Page 11: "Engen Gumtrees – Approx. 4.86km from site (Travel distance): This <u>future planned filling station</u> is situated opposite the Matlosana Mall on the northern side of the N12 near the intersection of the N12 and the Matlsosana Mall Road. This filling station is situated Upstream (west) of the planned N12 Stilfontein site; the shared positive (eastbound) traffic between the future filling station and the proposed Stilfontein site will first pass this filling station and theraefore the impact of the proposed Stilfontein site will be minimal to the development of

	Engen Gumtrees. This filling station has not started construction as of May 2022.
With reference to the abovementioned matter and the draft Basic Assessment Report currently available for comment, kindly be advised of the following: 1. We have been instructed by [redacted] to comment on the Draft Basic Assessment Report. 2. We herewith request that you kindly provide us with Annexure D of the Draft Basic Assessment Report (The Public Participation). We herewith await receipt of the abovementioned information. Thanking you in anticipation.	We herewith confirm your registration as an Interested and Affected Party on behalf of Engen Petroleum Limited. You will shortly receive a link from WeTransfer to download Annexure D - Public Participation as requested. Trust you find the above in order. Please do not hesitate to contact us should you have any further questions in this regard.
We act as the attorneys for Engen Petroleum Limited (hereinafter referred to as "our client"), a registered Interested and Affected party, for the purposes of the matter under reference. With reference to the Draft Basic Assessment Report ("Draft BAR") as distributed to interested and affected parties for comment, for the purposes of the matter under reference, herewith our client's submissions: 1. The purpose of the application submitted in terms of the National Environmental Management Act, Act 107 of 1998 ("NEMA") read with the Environmental Impact Assessment Regulation as published in Government Notice R982 of 04 December f2014, as amended ("EIA Regulations") is in order to apply for Environmental Authorization for all listed activities potentially triggered by the activity being proposed on the subject property inter alia the establishment of Filling Station, Truck Stop, associated facilities and infrastructure. 2. The application under reference has a protracted history including having been subject to various public participation processes and amendments (see page 89 of Draft BAR). With reference to the submission included in the Draft BAR, relevant submissions and correspondence relating to the amendment of the application and public participation processes have not been included, specifically, all consents and directives determined by the Northwest Department of Economic Development; Environment, Conservation and Tourism ("the Department), relating to the amendment of the application and the additional public participation process undertaken All such correspondence and directives must be included in the Final Basic Assessment Report.	Noted. Noted. 1. Correct. 2. Kindly note that the Application form and Draft Basic Assessment was only made available for the first time with the third notice of Public Participation (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders). The first Public Participation (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders) took place from 28 August 2020 to 27 September 2020. This was during the Covid pandemic period and due to financial constrains not all of the specialist reports could be conducted and finalized. Therefore the project got to a stand

	still. During this time the scope of the project also changed from only a Truck Stop to a Truck Stop and Filling Station. The period between the First and Second Public Participation notification was longer than 6 months in between and therefore it was decided to re-advertised the project. All registered I&APs and Stakeholders was informed on 19 March 2021 “that the project and activities for the proposed Stilfontein Truck Stop has expanded and changed quite a bit since our initial notification of the first phase of the public participation that took place on 28 August 2020. In order to keep matters as simple as possible we will now close this Basic Assessment process for the proposed Stilfontein Truck Stop that was advertised on 28 August 2020. A new process for a Basic Assessment on Erf 3675 Stilfontein Ext 7 will commence soon. We have kept all your details and as you are a registered I&AP and or Stakeholder we will notify you of the new process for the Basic Assessment once the Public Participation process for the new application commences. Once you are in receipt of the new notice you will be allowed to comment on the new application and provide our office with your comments and or objections which will then be registered for a new process.” During this time specialists were appointed but yet again due to unforeseen financial constrains the specialist reports could not be finalized. The Basic Assessment could not be finalized due to outstanding specialist reports. Therefore no report was submitted or circulated. Another year passed and a number of objections/ comments were received from I&APs during this period. Our office then had a telephonic conversation with Mr. R. Nemanashi from NWDEDECT to discuss the way forward. It was decided that we conduct another public participation period but this time it will be done simultaneously with the submission of the Application form and Draft Basic Assessment Report. The Third Public Participation was conducted (notice boards on site; advertisement in 2x newspapers; flyers handed out on site; emails to pre-identified neighbouring property owners and Stakeholders) simultaneously with the submission of the Application form to NWDEDECT and the Draft BAR was circulated for comments to NWDEDECT; Stakeholders and all Registered I&APs between 7 April 2022 and 13 May 2022.

3. Section 6 (at page 24) of the Draft BAR identifies various listed activities that shall potentially be triggered by the activity (Filling Station, Truck Stop and associated facilities and infrastructure) for which authorization is being applied for. The Applicant appears to have not determined, with any certainty which listed activities are in fact triggered by the activity for which authorization is being applied for. The Applicant appears to have not determined, with any certainty which listed activities are in fact triggered by the activity for which authorization is being applied for. In the absence of the Applicant having, with certainty, determined which listed activity shall be triggered, it is submitted that the application and the circulation of the Draft BAR, is premature.	3. The Listed Activities are clearly stated in the Second Draft BAR and the reason for exclusion of all other activities that will no longer be Listed. Please refer section 7 of the report: Description of scope of the proposed activities on page 32 – 35. A Second Draft BAR will circulate for comments prior to submitting the Final BAR to NWDEDECT.
4. Only at such time as the Applicant has finalized relevant considerations, including the manner in which essential services are to be provided to the proposed activity and moreover, whether such proposal are to the satisfaction of the competent authorities (i.e. the City of Matlosana Local Municipality and SANRAL), could the Applicant have proceeded with the application, prepares the Draft BAR and thereafter circulated same for comment.	4. Noted. Updated Services Report attached under Annexure E7. A letter from City of Matlosana is attached under Annexure G3. A Second Draft BAR will now circulate for comments prior to submitting the Final BAR to NWDEDECT.
5. Interested and Affected Parties, potentially affected organs of state and the Department cannot be expected to evaluate, consider and make submissions and/ or a decision on the Draft BAR without the Applicant having finalized its intention for the activity to be established and further, provided sufficient detail in support of the activity as determined and the listed activities triggered.	5. Noted. A Second Draft BAR will now circulate for a 30 day comment period.
6. As shall appear from the matters further raised herein, critical aspects of the activity have not been finalized, suitable comments not received and, on such basis alone, the Draft BAR could not have been prepared, publicly participated and interested and affected parties expected to make submissions thereon.	6. Noted. Comments were receive from DWS; City of Matlosana Local Municipality; Dr. Kenneth Kaunda District Municipality; NWDEDECT; other Stakeholders and I&APs. It was decided between NWDEDECT and our office that a Second Draft BAR will be circulated for a 30 day comment period prior to submitting the Final BAR to NWDEDECT.
THE AVAILABILITY OF ESSENTIAL SERVICES: 7. The Draft BAR was accompanied by different studies relating to the manner in which essential services are to be provided to the activity. Whilst the Applicant has, to an extent, provided some insight into the manner in which essential services are to be provided, the Applicant has not provided sufficient detail and/ or confirmation from the competent authorities, such as the City of Matlosana Local Municipality ("Municipality"), whether such proposals are acceptable.	7. Please refer to Annexure G3 for a letter from City of Matlosana regarding service provision. Please also refer to Annexure E7 for the updated Services Report. Due to the availability of new information regarding services a Second Draft BAR is circulated for another comment period of 30 days.

In the absence of such information and detail having been finalized, again, it is submitted that the preparation and circulation of the Draft BAR is premature.	
8. With reference to the different reports that accompanied the Draft BAR and purport to motivate the manner in which services are to be provided to the subject property, the following must be resolved prior to the circulation of the Final BAR for consideration:	8. Noted.
8.1 From an inspection of the different reports submitted as part of the application; purportedly in support of the provision of essential services (water and stormwater), such are not dated. In the absence of such, interested and affected parties and/ or competent authorities cannot determine the validity and relevance of such submissions, for the purposes of evaluating the environmental authorization being applied for.	8.1. Noted. The Services Report has been rectified and updated.
8.2 The Civil Engineering Services Report suggests that the existing pump station and sewer network is situated to the south of the subject property, over the "N14". The N14 is not situated to the south of the subject property and the infrastructure to be relied upon for the purposes of attenuating sewerage has not been properly identified.	8.2. Noted. The Services Report has been rectified and updated. No sewerage will be attenuated.
8.3 The Draft BAR concedes that no investigation has been undertaken pertaining to the capacity of the existing sewerage infrastructure, purportedly situated to the south of the N12. In the absence of such an investigation having been undertaken by the Applicant, the proposed activity has not been determined, motivated and/ or confirmed.	8.3. The Services Report has been updated and the capacity of the sewerage infrastructure is provided. Please refer to page 15 to 18 for information regarding sewer within the Services Report under Annexure E7.
8.4 The study pertaining to the manner in which water is to be provided to the subject property, in a similar fashion to the study on sewerage, concedes that a capacity analysis was not conducted and accordingly that the final design and /or proposal pertaining to the provision of water has not been determined.	8.4. Please refer to Annexure E7 for the updated Services Report.
8.5 It would be expected that, at the very least, the competent authorities responsible for the provision of services would have been consulted and their comments procured, pertaining to the provision of essential services to the activity and the capacity of the infrastructure to be relied on. In the absence of such critical comments having accompanied the application, it is submitted that the Applicant has not motivated the listed activities for which authorization is being applied for nor the activity being proposed.	8.5. The Listed Activities were updated in the Second Draft BAR and is clearly indicated if it is Listed or Not Listed and the reason for it. The Services Report was updated and included under Annexure E7. A letter from City of Matlosana is attached under Annexure G3.
8.6 The Draft BAR proposes that certain essential services are to be pipe jacked beneath the N12 to the south of the subject property. The Draft BAR was not accompanied by any information in support of the method being proposed, including any method statement and/ or proposed measures to be implemented in order to mitigate the impacts associated with such a method. Moreover, relevant comments by	8.6. Please refer to Annexure E7 for the Services Report and Annexure G3 for a letter from City of Matlosana. The City of Matlosana suggest either pipe jacking under the N12 or a Septic Tank. Both options are investigated for the sewer. The Engineer is also in communication with SANRAL should the pipe jacking option be chosen as the most feasible option.

organs of state, such as SANRAL, the competent authority responsible for the N12, have not been procured and in the absence of such comments having been received, interested and affected parties cannot evaluate such proposal nor can the Department determine whether such will in fact be permitted.	
9. With reference to the quotation received from Eskom and as included in the Draft BAR, the Final BAR should confirm whether such quotation is valid and, if so, whether such has been accepted.	9. Please refer to Annexure E7 for a letter from Eskom confirming that they have the capacity to supply the site with electricity.
10. We deem it appropriate to, again, refer your attention to what has already been stated herein pertaining to the listed activities identified and that the Draft BAR does not identify which listed activities are triggered and for which environmental authorization is being applied for. The aforementioned issue appears to be perpetuated by the lack of certainty relating to the availability and/ or provision of essential services.	10. The Section pertaining to the Listed Activities in the BAR is updated and clearly indicated whether it is Listed or Not Listed.
11. It is respectfully submitted that with reference to the aforementioned, that interested and affected parties have not been placed in a position to properly consider and comment on relevant factors, such as the provision of essential services. Moreover, the competent authority shall not be in a position to evaluate the application with reference to the criteria set out at Section 24O of NEMA, including evaluating comments received from organs of state that have jurisdiction over any aspect of the activity which is the subject of the application.	11. A Second Draft BAR is circulating for comments for a period of 30 days.
WHETHER A WATER USE LICENSE IS REQUIRED: 12.The application was initiated during 2020 and the Draft BAR is now, some two years after the initiation of the application, being circulated for consideration. Irrespective of the substantive lapse in time since inception of the application and preparation of the Draft BAR, important relevant considerations have not been finalized including whether a Water Use License in terms of the National Water Act; Act 36 of 1998 ("Water Act"), is required. Such considerations should have been finalized prior to the circulation of the Draft BAR.	12. A Water Use License in terms of the National Water Act; Act 36 of 1998 is not applicable for the application. No water use is triggered by this application and no watercourse/ wetland is situated on or in close proximity to the site. Please refer to Annexure G6 for a letter received from DWS confirming that no WULA will be required for this project.
13. The Draft BAR readily concedes that there is an impoundment on the southwestern corner of the subject property and into which water flows.	13. An impoundment is situated outside of the site to the south west. The stormwater will no longer be attenuated and diverted to the impoundment. It will now be managed through surface runoff; channels; and stormwater pipes. The site will manage runoff to a field inlet where it will drain into a pipe. There is a connection point just east of Kowie Street; where the proposed pipeline will connect.
14. With reference to the definition for a water course; which includes that of a "dam", and in view of the intention of the Applicant to attenuate stormwater	14. Correct. However; the stormwater will no longer be attenuated into the impoundment and therefore no water use license will be required.

into the impoundment, it is submitted that a Water Use License is required, as the activity shall result in inter alia the disposing of water in a manner which may detrimentally impact on a water resource and/ or the altering of the beds, banks, course or characteristics of a watercourse, et.	
15. The relevance of determining whether a Water Use License is required and moreover, the arrangements for the attenuation of stormwater to such impoundment, cannot be undermined. Flooding is experienced in proximity to the subject property on the N12.	15. Please refer to number 14 above.
16. It is our respectful submission that it is of fundamental. Importance that the aforementioned is resolved in view of the dolomitic conditions identified in proximity to and on the subject property and which may potentially result in the formation of sinkholes, in the absence of proper stormwater management.	16. Noted. The dolomitic conditions of the site has been taken into consideration and stormwater is explained above.
17. In addition to the matters as aforesaid and with reference to the proposals in the Draft BAR, the management of stormwater must include the positioning of oil traps in order to ensure that dangerous goods are not allowed to enter the receiving environment and/ or watercourse.	17. Oil will not run into the stormwater system as this is considered a hazard. Items having oil will have its own system that will aid in the proper collection and disposal of spillage.
18. The Draft BAR makes mentioned of listed activity 19 of Listing Notice 1 as published in Government Notice R989 of 4 December 2014, as amended. Irrespective of such activity being identified, the Draft BAR does not motivate why such activity was identified and moreover, what is being proposed that potentially would result in such activity being triggered. Again, in the absence of certainty pertaining to the activity being proposed and the associated infrastructure, the Draft BAR has been circulated prematurely.	18. Listed Activity 19 of Listing Notice 1 is Not triggered by this application. Please refer to section 7 of the report where the Listed Activities are updated and discussed. A Second Draft BAR is circulated for comments.
THE DRAFT BAR HAS NOT MOTIVATED RELEVANT CONSIDERATION SUCH AS FEASIBLITY:	
19. The Draft BAR was accompanied by a Traffic Impact Statement by Corli Havenga Engineers, dated September 2020 as well as a Feasibility Study by EDL, dated March 2022, inter alia, it appears common cause that feasibility is a relevant consideration for the activity under reference being a Truck Stop and Filling Station.	19. Noted.
20. With reference to the Traffic Impact Statement prepared, the following is specifically recorded: “Truck Stops operate different to Filling Stations. Long-Wall Trucks tend to stop at certain predefined refueling stops due to bulk supply deals and don’t always stop at a Truck Stop. Truck Drivers normally determine overnight stays. Motorists normally don’t us Truck Stops. For the purpose of this study we will assume an attraction rate of 12% of the peak hour truck trips with a 50:50 directional split during peak traffic hours.”	20. Please refer to Annexure E9 for the updated Traffic Impact Study.

21. In contrast to the motivation included in the Traffic Impact Statement, the study by EDL considers and takes into account light vehicle trips. In fact, two thirds of the trips relied on in support of the activity being feasible, relate to light vehicle trips. With reference to the aforesaid and the concession by the Applicant's Engineer that "motorists" (i.e. light vehicles) normally don't use Truck Stops, only 124 774 liters can be expected (i.e. being only the liters anticipated from heavy vehicles). Accordingly, with reference to the different reports that accompany the Draft BAR, such contradict each other, and do not serve to motivate the feasibility of the activity.	21. The Facility that was previously only a Truck Stop; now includes Filling Station Amenities and will also target Light Vehicles through the additional Filling Station Amenities; products; services and offerings; it means that some of the vehicle trips will now also include Light Vehicles.
22. With reference to the traffic counts relied upon by EDL for the purposes of its study, such are also not adequate as such are based on a single weekday 24-hour count at the intersection of Kowie Street and the N12. Expected fuel sales must be based on average annual traffic demand, which should be calculated based on the average daily traffic, which requires a seven-day count including all five weekdays, as well as Saturday and Sunday. We submit that with reference to the aforementioned and the limited relevant traffic count (a single day), that there has been an over estimation of the actual traffic demand.	22. In the revised and updated Feasibility Rev. 2 – June 2022; additional Traffic Count Information was provided on the N12 from SANRAL; which is traffic data gathered near the site; over a number of days in 2016 and 2019. The 2020 (24hr) Traffic count over 1 day is in line and only slightly more than the 2019 traffic volume figures from SANRAL.
23. From a proper analysis of historical traffic data, including the different stations relied on for the traffic counts, it is submitted that an overly optimistic traffic growth of 2,5% was applied and that in fact a growth rate of 2,0% is expected. In this regard, we are informed that a linear regression method must be applied.	23. A 2,5%/ annum future traffic growth is realistic for the future; if one looks at the SANRAL Count Stn 19852 and 19853 volume figures combined; which shows a combined annual traffic growth of 3,7% annum from 2016 to 2019.
24. The Feasibility Study submitted does not serve the purposes for which such was prepared, as set out in the introduction inter alia determining whether the proposed site is feasible, the viability of the development and, the impact on competitors' Filling Stations and/ or Truck Stops.	24. The Revised Feasibility Study (Rev 2) has been updated and determines if the site is feasible taking the Heavy Vehicles and the Light Vehicles into account.
25. As a point of departure and the radius determined for the purposes of identifying competitors' Filling Stations, the EDL study does not advisee why a 25km radius was not applied and why a 10km radius is determined to be acceptable. It is submitted with reference to applicable guidelines and policies, having regard to the nature of the land use being proposed, that a radius of 25km should have been applied along the N12.	25. As the proposed site is opposite the Stilfontein residential area; and within 8km from Klerksdorp; a large town; the site is therefore not considered a rural site; and hence the 25km requirement for rural sites is not applicable.
26. The submissions do not identify all reliant considerations including proposed Filling Stations and/or Truck Stops that will potentially be impacted upon by the land use being proposed. As an example and with reference to approved latent rights, the studies do not consider the dual Filling Sites being proposed in proximity the Matlosana Mall situated approximately 5km to the west of the subject property, inter alia Erf	26. The Revised Feasibility Study (Rev 2) has been updated and includes the tow planned sites next to the Matlasana Mall – these two sites do not have direct access from the N12; and will be supported by traffic to/ from the Matlosana Mall with traffic travelling north/ south between the Mall and Klerksdorp along the recently built

2182 and 2315 Klerksdorp Extension 38. The aforementioned must be investigated and reported upon.	Matlosana Mall Road linking the N12 and Buffelsdoorn Rd to the north.
27. With reference to the shared marked identified, the majority of traffic identified in the traffic count is travelling towards or from the west (towards or from Klerksdorp). It is submitted that with reference to the aforesaid, that in fact the actual shared market of the application site with existing sites towards the west of the N12, has not been incorrectly identified.	27. As mentioned above the Revised Feasibility Study (Rev 2) has been updated and includes the two planned sites next to the Matlasana Mall – these two sites do not have direct access from the N12; and will be supported by traffic north/ south traffic from the Matlosana Mall along the recently built Matlosana Mall Road linking the N12 and Buffelsdoorn Rd to the north.
28. In addition to having incorrectly identified the shared market, it is also submitted that the expected shared traffic, the moving market factor, and consequently the expected impact on other Filling Stations, as reported in the Feasibility Study, is very subjective and without sound scientific basis.	28. The shared markets are based on distances between filling stations and existing fuel markets; with some common sense and although not an exact or scientific basis; one can estimate the moving market factor; by looking at the markets surrounding the sites; the distance and the passing traffic. From previous traffic and interception rate surveys undertaken; estimations on interception rates can also be made.
29. With reference to the different interception rates applied, no discounting factor was determined, irrespective of the proposed access arrangements to the proposed activity. In view of the access being permitted form the N12 and that access shall be situated approximately 100 meters from the N12, a further discount should be applied to the interception rates relied on.	29. From previous traffic and interception rate surveys undertaken at existing filling stations; estimations on interception rates can fairly accurately be made. We have already discounted our Interception rates to only 1,75% and 2,75% for the N12 traffic; which will be higher if direct access to the N12 is established.
THE TRAFFIC IMPACT STATEMENT: 30. The Traffic Impact Statement determines and motivates the activity as being a trip attracter as opposed to a trip generator. The aforementioned is disputed, having regard to the actual associated land uses being proposed, including a clinic, Laundromat and shops.	30. The Traffic Impact Statement was updated. Please refer to Annexure E9.
31. With reference to the Traffic Impact Statement, such was prepared reference to traffic counts conducted during 2019 and prior to the Covid-19 pandemic. The report has not been updated with reference to relevant and current traffic counts. We expect updated traffic counts are necessitated in view of the National Pandemic, the influence on traffic and with a view of determining accurate traffic counts.	31. The Traffic Impact Statement was updated and attached as Annexure E9.
32. We again refer to the contradiction between the Traffic Impact Statement and Feasibility Study, pertaining to whether the activity will attract light vehicles. The Traffic Impact Statement potentially grossly underestimates the total traffic that will be intercepted, from a Traffic Engineering perspective, by having ignored light vehicle trips, if the approach of EDL	32. Both the Traffic Impact Statement and Feasibility Study was updated and attached as Annexure E4 and E9.

is to be accepted (i.e. by including light vehicle trips), which is denied. The Applicant must rectify the contradiction between the different expert studies.	
33. As it appears from the Comment & Response Report, various interested and affected parties have advised of the high accident rate at the Kowie/ N12 intersection, adjacent to the subject property and the safety concerns associated therewith. The EAP failed to address the aforesaid issues in the Draft BAR and/ or introduce any study in such regard.	33. It is understood that stormwater from the whole of Stilfontein drains to the impoundment adjacent to the study site. Please refer to an email received from the project Engineer under Annexure E7. It also seems that there is a dip in the road where water piles up. We are also aware that City of Matlosana was investigating the matter as they contacted our office earlier this year (2022) to get access to the adjacent site. This current situation should be reported to the City of Matlosana. Kindly note as previously mentioned that the stormwater for the proposed project will be managed through surface runoff; channels; and stormwater pipes. The site will manage runoff to a field inlet where it will drain into a pipe. There is a connection point just east of Kowie Street; where the proposed pipeline will connect to.
34. Two-way stop-controlled intersection, on major multi-lane arterials are unsafe, given the high speed on an uninterrupted highway. The Traffic Impact Statement has not addressed this and/ or the concerns previously raised.	34. The Traffic Impact Study recommend that certain upgrades be done at this intersection to specifically cater for the additional need.
PEDESTRIAN ACCESS: 35. With reference to the different studies that accompanied the Draft BAR, consistent reference is made to the residential area situated to the south of the subject property, on the opposite side of the N12 (see as an example page 8 of the EDL report). Further, that it is anticipated that the employees for the proposed facility shall be from the aforementioned residential area and within walking distance (see page 17 of the EDL report).	35. Please refer to Section 6 – Site Access of the Basic Assessment Report under non-motorised transport as well as the Traffic Impact Study on page 13 – 15 under Annexure E9.
36. With reference to the submissions included in the Draft BAR, including the different studies, no mention is made pertaining to the manner in which pedestrian access shall be provided to the proposed activity. Having regard to the location of the residential area, and the national road N12, it is expected that a suitable pedestrian bridge shall be proposed in order to provide suitable and safe access to the activity for pedestrians and potential patrons from the residential area to the south.	36. The Traffic Impact Study was updated. Please refer to Annexure E9 and page 13 to 15 of the Traffic Impact Study.
37. With reference to the activity being proposed, such includes facilities that will attract pedestrians such as the proposed clinic and shop facilities. Further, as stated in the Draft BAR, employees will be sourced within walking distance from the subject property. 38. It is submitted that it is incumbent on the Applicant to properly motivate the activity including the	37. Kindly note this is a normal convenience store with restaurants for truck drivers and motorists. The clinic is only for the truck drivers and will only be one small office/ room which will treat minor ailments of the truck drivers (i.e. headaches etc.).

manner in which it intends providing pedestrian access having regard to the proximity of the residential development to the subject property and the barrier of the N12.	38. Please refer to the need and desirability under Section 9 – Socio-economic context and Need and Desirability of the proposed project.
With reference to the substantive issues identified herein relating to the Draft BAR and accompanying studies, we expect that it may be necessary for a further Draft BAR to be prepared and thereafter publicly participated. Insofar as the Applicant intends simply proceeding with the preparation of a Final BAR, which it does of its own pencil, then the issues as identified herein must be addressed and only thereafter may the Final BAR be circulated for consideration.	Your suggestion was taken into consideration and a discussion between NWDEDECT and our office confirmed that a Second Draft BAR will circulated for a 30 day comment period prior to the submission of the Final BAR to NWDEDECT.
We herewith reserve our client's rights in order to expand, elaborate and introduce such additional submissions, as may be required and for the purposes of any further submissions for the purposes of the matter under reference.	Noted.

14 ENVIRONMENTAL IMPACT ASSESSMENT:

13.1 IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed are provided. This impact assessment applies to all the identified alternatives to the activities identified.

The primary environmental issues were identified by means of analysing the project activities; components; various layout plans; potential impacts; environmental sensitivities; feedback and comments received from I&APs; desktop analysis; research of existing information and historical data available as well as a site visit by the Environmental Assessment Practitioner (EAP) and Specialists.

The identified issues are grouped into different categories namely: Terrestrial ecology; wetland/ aquatic; provision of services; geology and soils; socio-economic; cultural and heritage and agriculture of the project. The following methodology was used to determine the impacts.

IMPACT RATING METHODOLOGY

The significance of each impact identified will be assessed according to the following variables (evaluation components):

SIGNIFICANCE is the product of probability and severity. Probability describes the likelihood of the impact actually occurring, and is rated as follows:

PROBABILITY

PROBABILITY		
IMPROBABLE	LOW POSSIBILITY OF IMPACT TO OCCUR EITHER BECAUSE OF DESIGN OR HISTORIC EXPERIENCE.	RATING = 1
PROBABLE	DISTINCT POSSIBILITY THAT IMPACT WILL OCCUR.	RATING = 2
HIGHLY PROBABLE	MOST LIKELY THAT IMPACT WILL OCCUR.	RATING = 3
DEFINITE	IMPACT WILL OCCUR, IN THE CASE OF ADVERSE IMPACTS REGARDLESS OF ANY PREVENTION MEASURES.	RATING = 4

The ***SEVERITY FACTOR*** is calculated from the factors given to “intensity” and “duration”. Intensity and duration factors are awarded to each impact, as described below.

The ***INTENSITY FACTOR*** is awarded to each impact according to the following method:

INTENSITY FACTOR		
LOW INTENSITY	NATURAL AND MAN-MADE FUNCTIONS NOT AFFECTED.	FACTOR 1
MEDIUM INTENSITY	ENVIRONMENT AFFECTED BUT NATURAL AND MAN-MADE FUNCTIONS AND PROCESSES CONTINUE.	FACTOR 2
HIGH INTENSITY	ENVIRONMENT AFFECTED - NATURAL OR MAN-MADE FUNCTIONS ARE ALTERED TO THE EXTENT THAT IT WILL TEMPORARILY OR PERMANENTLY CEASE OR BECOME DYSFUNCTIONAL.	FACTOR 3

DURATION is assessed and a factor awarded in accordance with the following:

DURATION		
NONE		FACTOR 0
SHORT TERM	<1 TO 5 YEARS	FACTOR 1
MEDIUM TERM	5 TO 15 YEARS	FACTOR 2
LONG TERM	IMPACT WILL ONLY CEASE	FACTOR 3

	AFTER THE OPERATIONAL LIFE OF THE ACTIVITY, EITHER BECAUSE OF NATURAL PROCESS OR BY HUMAN INTERVENTION	
PERMANENT	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	FACTOR 4

The ***SEVERITY RATING*** is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below. For example:

THE SEVERITY FACTOR	=	INTENSITY FACTOR X DURATION FACTOR
	=	2 X 3
	=	6

A ***SEVERITY FACTOR*** of six (6) equals a severity rating of medium severity (rating 3) as per table below:

RATING	**FACTOR**
LOW SEVERITY (RATING 2)	CALCULATED VALUES 0 TO 4
MEDIUM SEVERITY (RATING 3)	CALCULATED VALUES 5 TO 8
HIGH SEVERITY (RATING 4)	CALCULATED VALUES 9 TO 12
VERY HIGH SEVERITY (RATING 5)	CALCULATED VALUES 13 TO 16
SEVERITY FACTORS BELOW 3 INDICATE NO IMPACT	

A SIGNIFICANCE RATING IS CALCULATED BY MULTIPLYING THE SEVERITY RATING WITH THE PROBABILITY RATING.

The ***SIGNIFICANCE RATING*** should influence the development project as described below:

SIGNIFICANCE RATING		
LOW SIGNIFICANCE	CALCULATED SIGNIFICANCE RATING 0 TO 6	POSITIVE IMPACT AND NEGATIVE IMPACTS OF LOW SIGNIFICANCE SHOULD HAVE NO INFLUENCE ON THE PROPOSED DEVELOPMENT PROJECT.
MEDIUM SIGNIFICANCE	CALCULATED SIGNIFICANCE RATING >6 TO 15	POSITIVE IMPACT: SHOULD WEIGH TOWARDS A DECISION TO CONTINUE NEGATIVE IMPACT: SHOULD BE MITIGATED TO A LEVEL WHERE THE IMPACT WOULD BE OF MEDIUM SIGNIFICANCE BEFORE PROJECT CAN BE APPROVED.
HIGH SIGNIFICANCE	CALCULATED SIGNIFICANCE RATING 16 AND MORE	POSITIVE IMPACT: SHOULD WEIGH TOWARDS A DECISION TO CONTINUE, SHOULD BE ENHANCED IN FINAL DESIGN. NEGATIVE IMPACT: SHOULD WEIGH TOWARDS A DECISION TO TERMINATE PROPOSAL, OR MITIGATION SHOULD BE PERFORMED TO REDUCE SIGNIFICANCE TO AT LEAST MEDIUM SIGNIFICANCE RATING.

The above methodologies will be used to determine the significance of the potential impacts associated with the proposed development as and the different layouts.

Table 12: Potential Impacts

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
	PLANNING PHASE:							
Proposal/ Alternative 1/ Alternative 2	No impacts identified.	-	-	-	-	-	-	-
	CONSTRUCTION PHASE:							
	Biodiversity:							
Proposal	The site has sections which is slightly degraded and habitat has been transformed to an extent, however, the onset of additional activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact on the animals that use the area as habitat. From the site visit, a section has already been found to be an established truck stop or similar operation located just outside the northern border of the proposed layout received. The grassland has been found to be surprisingly natural for a site located adjacent to the main road of a puff adder was sighted within the filed showing that it remains a viable habitat for species and potential prey. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	4	2	5	10	4	Medium	Low
Alt 1	Same as Proposal.	4	2	5	10	4	Medium	Low
Alt 2	Same as Proposal.	4	2	5	10	4	Medium	Low
Alt 3	Same as Proposal	4	2	5	10	4	Medium	Low
No-go Option	Vacant land tends to over time degrade more if unattended and especially with the location of the site which is in close proximity to the N12 and it could potentially become an illegal dumping site or attract illegal vagrants if care is not taken.	3	2	3	6		Medium	Medium

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Proposal	Development related activities may lead to loss of floral species of conservation concern. Twenty-five (25) species listed by POSA for the area are classified as species of conservation concern and may potentially occur on the project footprint. The Protected Tree, *Vachellia erioloba* (Camel thorn) was confirmed to occur within the project footprint (VU2). Development and related activities could impact on the sensitive habitats situated in and around the development footprint.	4	2	5	10	4	Medium -High	Medium -Low
Alt 1	Same as Proposal.	4	2	5	10	4	Medium -High	Medium -Low
Alt 2	Same as Proposal.	4	2	5	10	4	Medium -High	Medium -Low
Alt 3	Same as Proposal	4	2	5	10	4	Medium	Low
No-go Option	Floral species of conservation concern could possibly be lost if the site is invaded and occupied by illegal vagrants or if illegal dumping takes place or even if the site is used for a footpath.	3	3	3	9	4	Medium	Medium
	Hydrology:							
Proposal	Impacts on the water resources (and potential wetland) located outside the south western border of the development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly spread from the road access points, during construction or during operational phase from sources such as the parking zones, or other vehicle related zones.	4	2	4	8	3	Medium -High	Medium
Alt 1	Same as Proposal.	4	2	5	10	4	Medium -High	Medium
Alt 2	Same as Proposal.	4	2	5	10	4	Medium -High	Medium
Alt 3	Same as Proposal	4	2	5	10	4	Medium -High	Medium
No-go Option	None	0	0	0	0	0	Low	Low
Proposal	Ground and surface water contamination: - Contamination of ground and surface water as a result of spillages and leaking equipment; - The installation of underground fuel tanks has the potential to contaminate groundwater in the unlikely event of any leaks or seepage that traverse below the water table;	4	2	5	10	4	Medium -High	Medium

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
	- Sedimentation and water pollution due to wrong stockpiling of excavated materials.							
Alt 1	Same as Proposal.	4	2	5	10	4	Medium -High	Medium
Alt 2	Same as Proposal.	4	2	5	10	4	Medium -High	Medium
Alt 3	Same as Proposal	4	2	5	10	4	Medium -High	Medium
No-Go option	None	0	0	0	0	0	Low	Low
Proposal	Generation of waste	4	2	2	4	2	Medium	Low
Alt 1	Same as Proposal.	4	2	2	4	2	Medium	Low
Alt 2	Same as Proposal.	4	2	2	4	2	Medium	Low
Alt 3	Same as Proposal	4	2	2	4	2	Medium	Low
No-Go Option	Same as Proposal	3	3	3	9	4	Medium	Medium
Proposal	Generation of grey and brown waste water	4	2	2	4	2	Medium	Low
Alt 1	Same as Proposal.	4	2	2	4	2	Medium	Low
Alt 2	Same as Proposal.	4	2	2	4	2	Medium	Low
Alt 3		4	2	2	4	2	Medium	Low
No-go Option	None	0	0	0	0	0	Low	Low
Proposal	Accidental spills of hazardous materials stored and handled.	1	3	2	6	3	Medium-High	Low
Alt 1	Same as Proposal.	4	3	2	6	3	Medium-High	Low
Alt 2	Same as Proposal.	4	3	2	6	3	Medium-High	Low
Alt 3	Same as Proposal.	4	3	2	6	3	Medium-High	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Lowering of the groundwater table during dewatering of the excavation pits during the installation of the underground tanks.	2	1	1	1	1	Low	Low
Alt 1	Same as Proposal.	4	2	3	6	3	Low	Low
Alt 2	Same as Proposal.	4	2	3	6	3	Low	Low
Alt 3	Same as Proposal.	4	2	3	6	3	Low	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Stormwater – Wet series of entire development and individual stands	4	3	2	6	3	Medium-High	Low
Alt 1	Same as Proposal	4	3	2	6	3	Medium-High	Low
Alt 2	Same as Proposal	4	3	2	6	3	Medium-High	Low
Alt 3	Same as Proposal	4	3	2	6	3	Medium-High	Low
No-Go Option	Stormwater	4	2	3	6	3	Medium-High	Low
Proposal	Stormwater: - entire development	3	2	3	6	3	Medium-High	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium-High	Low
No-Go Option	Stormwater	4	2	3	6	3	Medium-High	Low
Proposal	Stormwater drainage	3	2	3	6	3	Medium-High	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 3	Same as proposal	3	2	3	6	3	Medium-High	Low
No-go Option	Same as proposal	4	2	3	6	3	Medium-High	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
	Geology and Soils:							
Proposal	Trenching	3	2	3	6	3	Medium-High	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium - High	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Water features/ Truck Wash	3	2	3	6	3	Medium-High	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium-High	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium-High	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Disturbance of surface geology and exposed surfaces for development foundation. Disturbance to subsurface geological layers. Contamination of ground and surface water as a result of spillages.	4	2	3	6	3	Medium-High	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium-High	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium-High	Low
Alt 3	Same as Propoal	4	4	3	6	3	Medium-High	Low
No-Go Option	Disturbance of surface geology	2	2	3	6	3	Medium-High	Low
Proposal	Soil erosion; loss of topsoil; deterioration of soil quality.	4	2	3	6	3	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	Same as Proposal	4	2	3	6	3	Medium	Low
	Air Quality:							
Proposal	Dust/ Air Pollution. Excessive dust pollution can be caused during the construction phase of the proposed development should it take place during the dry and windy seasons. Emissions caused by equipment, machinery and vehicles	4	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	4	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	4	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	4	2	1	2	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Topography: Visual impact. - The contractor's site camp; site offices; construction vehicles etc. could potentially have a negative visual impact on the neighbouring properties and residents.	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	Visual impact - Topography	3	2	4	8	3	Medium	Medium
Proposal	Visual impact of construction camp and activities	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Construction activities and materials etc. can have a negative visual impact.	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	None	0	0	0	0	0	Low	Low
Proposal	Builder's rubble being dumped on neighbouring properties.	2	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	2	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	2	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	2	2	1	2	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Noise.	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3		4	2	3	6	3	Medium	Low
No-Go Option		0	0	0	0	0	None	None
	Traffic and Roads:							
Proposal	Traffic.	3	1	1	1	2	Medium	Low
Alt 1	Same as Proposal	3	1	1	1	2	Medium	Low
Alt 2	Same as Proposal	3	1	1	1	2	Medium	Low
Alt 3	Same as Proposal	3	1	1	1	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Access routes.	4	1	1	1	2	Medium	Low
Alt 1	Same as Proposal	4	1	1	1	2	Medium	Low
Alt 2	Same as Proposal	4	1	1	1	2	Medium	Low
Alt 3	Same as Proposal	4	1	1	1	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Vehicular access and movement of construction vehicles.	4	1	1	1	2	Medium	Low
Alt 1	Same as Proposal	4	1	1	1	2	Medium	Low
Alt 2	Same as Proposal	4	1	1	1	2	Medium	Low
Alt 3	Same as Proposal	4	1	1	1	2	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
No-Go Option	Vehicular access and movement of pedestrians	3	2	4	8	3	Medium	Medium
Proposal	During the construction phase; traffic volumes will increase along the approach roads which may result in vehicle/ pedestrian collisions and degrade the road condition.	3	1	1	1	2	Medium	Low
Alt 1	Same as Proposal	3	1	1	1	2	Medium	Low
Alt 2	Same as Proposal	3	1	1	1	2	Medium	Low
Alt 3	Same as Propodsal	3	1	1	1	2	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
	Infrastructure and Services:							
Proposal	Provision of infrastructure and services.	4	2	4	8	3	Medium -High	Low-Medium
Alt 1	Same as Proposal	4	2	4	8	3	Medium -High	Low-Medium
Alt 2	Same as Proposal	4	2	4	8	3	Medium -High	Low-Medium
Alt 3	Same as Proposal	4	2	4	8	3	Medium -High	Low-Medium
No-Go Option	None	0	0	0	0	0	None	None
	Socio-Economic and Cultural Historical Environment:							
Proposal	Aesthetics; landscape character and sense of place.	4	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	4	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	4	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	4	2	1	2	2	Medium	Low
No-Go Option	Same as Proposal	2	2	4	8	3	Medium	Medium
Proposal	Increased temporary jobs during construction	4	1	1	1	2	Medium	Positive
Alt 1	Same as Proposal	4	1	1	1	2	Medium	Positive
Alt 2	Same as Proposal	4	1	1	1	2	Medium	Positive
Alt 3	Same as Proposal	4	1	1	1	2	Medium	Positive

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Optimization of the local economy	4	1	3	3	2	Medium	Positive
Alt 1	Same as Proposal	4	1	3	3	2	Medium	Positive
Alt 2	Same as Proposal	4	1	3	3	2	Medium	Positive
Alt 3	Same as Proposal	4	1	3	3	2	Medium	Positive
No-Go Option	None	0	0	0	0	0	None	None
Proposal	The potential impact of the proposed development on archaeological, paleontological and heritage remains	1	1	0	1	2	Medium -Low	Low
Alt 1	Same as Proposal	1	1	0	1	2	Medium -Low	Low
Alt 2	Same as Proposal	1	1	0	1	2	Medium -Low	Low
Alt 3		1	1	0	1	2	Medium - Low	Low
No-Go Option	None	0	0	0	0	0	None	None
	Social well-being and quality of the environment/ General/ Other:							
Proposal	Safety and Security.	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	Safety on site	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Proposal	Security	3	2	1	2	2	Medium	Low
Alt 1	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 2	Same as Proposal	3	2	1	2	2	Medium	Low
Alt 3	Same as Proposal	3	2	1	2	2	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	Waste.	3	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	Waste handling	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	General substance and materials - Handling of general waste	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3		4	2	3	6	3	Medium	Low
No-Go Option		3	3	4	12	4	Medium - High	Medium - High
Proposal	Disposal of Waste	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3		
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	Contractors' yards and maintenance of construction camp	4	2	3	6	3	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	Medium	Low
Proposal	Mixing cement	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Mixing of chemicals	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as proposal	4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Storage areas	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3		4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	General substance and materials - Storage areas.	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3		4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Disposal of Hazardous Substances and materials	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3		4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Silencing of plant	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Maintain vehicles	3	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Cleanliness	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option	None	0	0	0	0	0	None	None
Proposal	Fires	3	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	3	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	3	2	3	6	3	Medium	Low
No-Go Option	Same as Proposal	3	3	4	12	4	Medium - High	Medium - High
Proposal	Toilet facilities	4	2	3	6	3	Medium	Low
Alt 1	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 2	Same as Proposal	4	2	3	6	3	Medium	Low
Alt 3	Same as Proposal	4	2	3	6	3	Medium	Low
No-Go Option		0	0	0	0	0	None	None
OPERATIONAL PHASE								
Operational	Impacts on the impoundment located to the south western border outside the site boundary. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly spread from the road access points, from sources such as the parking zones, or other vehicle related zones.	2	2	4	8	3	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Operational	Ground and surface water contamination: - Contamination of ground and surface water as a result of spillages and leaking equipment and underground tanks; - The installation of underground fuel tanks has the potential to contaminate groundwater in the unlikely event of any leaks or seepage that traverse below the water table; - Sedimentation and water pollution due to wrong stockpiling of excavated materials. - Spillages and tank leakages can lead to soil pollution. - Chemicals; soap etc. can end up in the storm water by means of washing equipment or paved surfaces.	3	3	4	12	4	High	Low - Medium
Operational	Generation of grey and brown waste water.	4	2	4	8	3	Medium	Low
Operational	Hazardous liquid surface spills (refuelling incidents, spills caused by leaking truck fuel tanks, filling of portable containers, filling of underground storage tanks, leaking aboveground storage tanks).	4	3	4	12	4	High	Low
Operational	Hazardous liquid subsurface leaks (leaking underground infrastructure, e.g. fuel tanks, coupling, pipelines, etc.).	4	3	4	12	4	High	Low
Operational	Stormwater - Development will have impermeable surfaces (paving roads, etc.) enhancing stormwater run-off which will reduce direct recharge to groundwater beneath these surfaces.	4	3	4	12	4	High	Low
Operational	Pressure on existing infrastructure and services and Management and monitoring of services (water and electricity)	2	2	4	8	3	Medium	Low
Operational	Generation of domestic waste. - Waste should be separated into clearly marked categories and disposed of in dustbins. - Recycling should take place wherever possible.	4	2	4	8	3	Medium-High	Low
Operational	Waste management – Hazardous - Large numbers of vehicles will enter and exit the site. Some of the vehicles may be leaking oil and fuel which enter onto the site. In addition this hazardous waste will be generated during the cleaning of oil separators and may occur as a result of spilt fuel o oil during refuelling or servicing of vehicles.	4	3	4	12	4	High	Low
Operational	Repair to fuel tanks. - Ignition of vapor due to repair. - Leak due to faulty repair.	4	3	4	12	4	High	Low
Operational	Pipework Control Measures to control and eliminate risks. - Fuel/ vapor in pipework – Leak through pipe wall.	4	3	4	12	4	High	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
	- Leak from pipework fittings.							
Operational	Emergency procedures - Operation of flammable liquids on site poses a potential fire and explosion risk. - Smoking on the premises. - Handling of cellphones near fuel pumps. - Health and Safety risks due to vehicular movement. - The cooking of the convenience shop and take-away outlet can cause a risk.	4	3	4	12	4	High	Low
Operational	Socio economic - A number of job opportunities will be created for skilled and un-skilled workers within the local community. A number of temporary jobs will also be created during the routine maintenance procedures. - The proposed filling station will provide additional choice and convenience for people and businesses in the immediate surrounds. - The filling station with its convenience store is likely to create a profit from the sale of fuel; food; drinks and other goods. This will indeed contribute to the overall economy of the area.	4	3	4	12	4	High	Positive
Operational	Disturbance of the public and neigbouring properties. - The filling station and convenience store will generate noise on a 24 hour basis. - Vehicular movement to and from the site will also generate noise; but should be similar to that what is experienced at the moment.	4	2	3	6	3	Medium-High	Low
Operational	Safety and Security	4	2	3	6	3	Medium-High	Low
	Lighting from the Truck Stop and Filling Station can be a hindrance or visually intrusive	3	2	3	6	3	Medium-High	Low
Operational	Traffic – trucks and vehicles form the Truck Stop and Filling Station	3	2	3	6	3	Medium-High	Low
Decommissioning and Post-Decommissioning Phase								
Decommissioning and Post-Decommissioning Phase	Impacts on the impoundment and water resources located outside the boundary of the site to the south west during and after closure and demolition. The results may be positive, if invaders have been brought under control during the construction and operational phase of the project, the site may be rehabilitated back to a natural landscape. However, since truck stop and filling stations or other municipal driven projects do not usually have a closure phase, no impact are predicted.	2	2	2	4	1	Low	Low
Decommissioning and Post-	Accidental spills of hazardous materials stored and handled.	1	3	4	12	4	Medium	Low

Proposal/ Alternative 1 and Alternative 2	Potential Impact:	Probability factor	Intensity Factor	Duration	Severity factor	Severity rating	Significance rating prior mitigation	Significance rating after mitigation
Decommissioning Phase								
Decommissioning and Post-Decommissioning Phase	Leaching of hydrocarbon pollutants from contaminated soil.	1	3	4	12	4	Medium-High	Low
Cumulative Impacts								
Incremental losses and fragmentation of habitat are two of the more serious cumulative impacts in terms of fauna and flora. Given the largely transformed and degraded nature of the surrounding landscape, the characteristics and sensitivity of the affected area, the nature of the proposed development, and the potential for cumulative impacts are expected to be low as the activities and therefore the impacts will increase. It was not realistically possible or very difficult to perform an impact assessment of the cumulative impacts based on the available information. The most important aspect related to cumulative impact management for the truck stop and filling station, will be to prevent contamination of the surrounding environment, especially in this case with petroleum related waste products stemming from parking areas and vehicle access and this impact is not easily reversed and remediated if it reaches the wetland and/ or surface water environments.							

Proposal; Alternative 1 and Alternative 2 –
Stilfontein Truck stop and Filling Station

Table 13: Potential Impacts and Proposed mitigation:

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:
PLANNING PHASE			
There are no impacts identified during the planning phase of the proposed project.			
CONSTRUCTION PHASE The impacts below applies to the proposal and all the alternatives as it is merely the location of facilities on the layout that differs.			
Biodiversity Impacts			
The site has sections which is slightly degraded and habitat has been transformed to an extent, however, the onset of additional activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact on the animals that use the area as habitat. From the site visit, a section has already been found to be an established truck stop or similar operation located just outside the northern border of the proposed layout received. The grassland has been found to be surprisingly natural for a site located adjacent to the main road of a puff adder was sighted within the filed showing that it remains a viable habitat for species and potential prey. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	**Negligible Medium**	• Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr) • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation. This will entail the spreading of topsoil, re-vegetation and management of invasive species. • Prevent impacts from reaching downstream water resources by ensuring installation and proper functioning of stormwater systems and drains to prevent contaminated water entering the natural environment. This will be prudent in this development, since petroleum and other hydrocarbons associated with the trucks and vehicle-based activities are likely to be spilled in the environment if not managed well.	**Low**
Development related activities may lead to loss of floral species of conservation concern. Twenty-five (25) species listed by POSA for the area are classified as species of conservation concern and may potentially occur on the project footprint. The Protected Tree, *Vachellia erioloba* (Camel thorn) was confirmed to occur within the project footprint (VU2). Development and related activities could impact on the sensitive habitats situated in and around the development footprint.	**Medium-High**	• Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Permit applications should be launched for the *Vachellia erioloba* (Camel thorn) in terms of the National Forest Act (Act no. 84 of 1998).	**Low**
Impacts may lead to the further increase of invasive species from the surrounding areas and may change	**Medium**	• Implement an Alien and Invasive Management Programme, which will aim to remove and manage the plants recorded during the field survey, since most of	**Low**

the vegetation structure and composition of this unit. It may also result in the spread of invaders already found on-site to other surrounding areas.		these species are already listed on the Alien and Invasive Species list as published in 2016 (Department of Environmental Affairs, 2016). • Ensure awareness amongst all staff, contractors and visitors to site to not needlessly damage flora. • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees.	
Hydrology			
Impacts on the water resources (and potential impoundment) located south western border outside the boundaries of the site of the development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly spread from the road access points, during construction or during operational phase from sources such as the parking zones, or other vehicle related zones.	**Medium-High**	- Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. - Adhere to all management and mitigation measures as prescribed within the wetland specialist report. - If possible, find an alternative placement for features where possible as to prevent placement within a wetland or wetland soils. The wetlands or associated buffer should be sufficient to protect ecological functioning of the area. - Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. - Prevent impacts from reaching downstream water resources by ensuring installation and proper functioning of stormwater management systems, which should include oil traps. - Continuous rehabilitation of the area should occur, as well as monitoring as prescribed. - Ensure proper stormwater management and maintenance of this system. Stormwater management will prevent impacts reaching the natural environment.	**Medium**
<u>Ground and surface water contamination:</u> - Contamination of ground and surface water as a result of spillages and leaking equipment; - The installation of underground fuel tanks has the potential to contaminate groundwater in the unlikely event of any leaks or seepage that traverse below the water table; - Sedimentation and water pollution due to wrong stockpiling of excavated materials.	**High**	- It is important that an Emergency Plan from the relevant fuel company be implemented. This Plan will be given once the relative fuel company signed the contract with the applicant/ owner. - All surface areas should be paved where storage tanks and peripheral infrastructure are to be placed in order to prevent ingress of contaminated water into the ground. - Flexible coupling should be provided for all pipes and connections to prevent spillages from occurring. - Designated area to be identified for construction vehicles to refuel and it should be done on impervious surfaces. All constructions vehicles should be in good working order; - Construction machinery should also be in good working order to avoid any oil leaks etc.; - Designated area to be identified where cement can be mixed on impervious surfaces; - Any chemicals or hazardous materials on site should be stored in a designated area and should be locked away. This area should be bunded to trap and store; by means of a container; any excess water or spillages. - Contaminated soil and building waste must be removed after construction.	**Medium/ Low**
Generation of waste	**Medium**	- Good housekeeping practises. Disposal of waste at a licensed landfill site.	**Low**
Generation of grey and brown waste water	**Medium**	- Adequate Ablution facilities.	**Low**
Accidental spills of hazardous materials stored and handled.	**Medium-High**	- Storage and handling of materials as per industry specifications. Adequately trained persons in Emergency Spill Response Procedures.	**Low**
Lowering of the groundwater table during dewatering of the excavation	**Low**	- Reduce excavation and construction time for tank installation. Groundwater level is below base of tank pit.	**Low**

pits during the installation of the underground tanks.			
Stormwater – Wet series of entire development and individual stands	**Medium-High**	- All wet services should be of good quality to ensure low maintenance. - Piping materials selected should also be appropriate for local subsurface conditions. If clay pipes are utilized in areas of shallow dolomite, a higher standard of pipe bedding is recommended e.g. stabilized bedding or over-excavation and re-compaction with an approved material (minimum specification to be G7 material) in layers of 150mm thickness, compacted to 93% mod AASHTO. Some soils may have low pH values, which will render the use of ferrous material for underground services unsuitable. Chapter II in A Technical Guide to Good House Construction NBRI of the CSIR (July 1984) should be consulted concerning the potential corrosion of pipes. - The NHBRC makes the following recommendations: Water piping materials shall be one or more of the following: ➢ High impact PVC pipes with vitualic joints. ➢ Other flexible (as defined in SABS 0102, Part 1) water pipes with flexible, self-anchoring connections. - Pipes having a diameter of less than 75mm should be: ➢ HDPE type IV. ➢ Polypropylene. - Water pipes entering buildings should either be fitted with flexible couplings or kinked with a "Z" to allow an opportunity for relative movement. A flexible connection at the junction with all outlet pipes should be used, which includes WC pan connections. - Pressure release systems tend to leak after a couple of years. This leaking water must flow directly into the storm- or sewerage water system. Water reticulation to houses should be kept at a minimum depth of 500mm up to the structure and above ground wherever possible along the structure. - As many services as possible should be placed within a single trench. - Encasement of pipes in concrete or soilcrete should be avoided. Preferably place pipes in sleeves. If this cannot be achieved, care must be taken to ensure that differential movement can still be accommodated without the pipe breaking. All stormwater, sewerage and water pipes and channels must be watertight. All laid wet services should be tested for leakage on installation using the air test (see NBRI Info Sheet Z/BOU 2-34)for water pipers, and the water test for sewerage pipes. - Placement of wet services below the footprint of structures must be avoided. No plumbing and drainage pipes should be placed under floor slabs, as far as practicable. Where this situation is unavoidable, reasons must be cited and the pipes must be placed in a sleeve to permit monitoring. - Where practical, pipes running parallel to structures should be kept at a distance of at least 5m from the structure. - Each stand should have a rodding-eye or some similar access to the sewer connection in addition to the inspection eye. - Each stand/ unit should have a water meter at a suitable location so that testing of the stand/ unit specific water supply is possible. Water leakage testing must be undertaken regularly, as set out in the risk management system. - The roots of trees planted near the line of water-bearing services often cause leaks in or malfunctioning of the	**Low**

		services. Care should, therefore, be taken to avoid the unfortunate positioning of trees and other plants. - Residents should be informed of where services traverse their garden so that accidental puncturing of pipes can be avoided.	
Stormwater: - entire development	**Medium-High**	- The design of wet services should be governed by the need to create low maintenance systems. Wherever possible keep services above ground to facilitate detection of leaks, maintenance and repair. - The stability of the centre-line of all bulk water services should be considered. - Piping used in mains and communication pipes should be flexible, while joints should be missed and, where required, self-anchoring type (i.e. not reliant on thrust blocks for their anchorage at fittings, except at valves and end caps). - The relevant provision of SABS 1200 DB, L, LB, LC, LD and LE shall be observed in the installation of all underground services. Water mains shall be laid only in road reserves - Provision for future connections shall be made to minimise the cutting into pipes to provide such connections. - Water pipe entries into the building shall be in accordance with those of the JSD's code of practice. - The use of pre-manufactured, unjointed manholes is preferred. The manhole should be placed on a properly prepared foundation. - Use flexible couplings on either side of manholes. - Water-borne sewerage reticulation must be installed. French drains are unacceptable. - A detailed sanitation and water reticulation plan should be drawn up for the development according to the local geological setting and engineering geological characteristics. The plan must be incorporated into the services management system of the local authority.	**Low**
Stormwater drainage.	**Medium-High**	- No accumulation of surface water is to be permitted and the entire development must be properly drained. - A minimum gradient of 1:150 should be maintained along storm-water systems. - Brick and pre-cast concrete walls must be so designed as to provide drainage ports at ground level permitting passage of maximum probable volumes of water. - When courtyards are designed the free flow of surface water should be ensured. Where gutter downpipes are to be found in such a courtyard, a lined canal should permit passage of water into a drain or onto the lawn away from the structure. The courtyard should preferably be paved and no garden beds should be created at gutter discharge points. Lawns must be graded in such a way to facilitate drainage. - To deal with rainwater run-off from the roofs of structures the following is recommended: ➢ Down-pipes should discharge into a lined or pre-cast furrow. This furrow should remove the water from the structure. The stormwater should be trained, without ponding, off the property and into the municipal stormwater system. ➢ If no guttering is to be utilized (not recommended), then a sealed surface with a width of 1,5m should be cast along those walls of the structure where water will be discharged from the roof. Roof water will cascade off this sloping roof onto the apron into a lined or pre-cast furrow. The stormwater should be drained, without ponding, off the property and into the municipal stormwater system. ➢ The ground immediately against the buildings shall be shaped to fall more than 75 mm over the first 1,5m	**Low**

		beyond the perimeter of the building, form where it shall drain freely away from housing units. Apron slabs, where provided, shall have the same fall. - All ponds, watercourses and road surfaces shall be rendered impervious. - No trees shall be planted within 1,5 times their eventual height from the line of stormwater services. - The stormwater drainage system shall incorporate measures to ensure water tightness of conduits and other compartments. Whenever possible, stormwater should be channelled in lined, surface canals. - Concrete non-pressure pipes should be of this spigot and socket type with rubber ring seals. Joints in box culverts, channels etc. should be sealed. Stormwater drainage conduits shall be constructed at gradients that will not permit the deposition of silt, or sand, of the type present in the catchment area.	
<u>Stormwater:</u> Increased stormwater run-off volumes and velocity	**High/ Medium**	- Even though stormwater systems on site are already in place the project Engineer should confirm and ensure that the stormwater system work effectively and should any amendments or upgrades be recommended it should be done. Stormwater and any runoff from the site to be disposed of in the relevant systems. - Adequate storm water mitigation throughout the construction site in order to prevent large pulses in stormwater; - The temporary stormwater measures will ensure that the stormwater is collected; filtrated and discharged in the correct manner; - Temporary cut off drains and berms shall be used to capture stormwater and promote infiltration during construction; - Earth, stone and rubble must not be placed in stormwater channel; - Stormwater outfalls shall be designed to reduce flow velocity and avoid soil erosion. - Fast and efficient disposal of stormwater as well as water from all areas around fuel and oil bearing infrastructure should be disposed of into the existing drainage system.	**Medium/ Low**
Geology and Soils			
Trenching	**Medium-High**	- Trenches and excavation works should be opened and closed as rapidly as possible. Avoid leaving trenches open over weekends or holidays. All trenches and excavation works must be properly backfilled and compacted according to specifications given in subclause 5.2.4 of SABS 1200 DA, but specifically to ground surface to prevent them from acting as French drains. Once services/ cables are installed and backfilling is completed, it must be ensured that the ground surface is graded to match the slope of the surrounding area. No rocks in the top layer. - Berms should be constructed on the up-slope side of trenches to prevent the inflow of water during storms. - The fall of trenches shall be away from buildings. Wherever practical, service tranches shall not be excavated along the length of housing units within the first 3m beyond the perimeter of such units. - No ponding of surface water is to be permitted over, in, or near trenches and excavations.	**Low**
Water features/ Truck Washbay	**Medium-high**	- The following minimum requirements must exist (Section 9, Part 3, SANS 1936 [2012]): - The design, construction and use of the water feature (truck wash) should always be to the satisfaction of the local city engineer, who should be aware of the requirements of water features in dolomitic areas.	**Low**

		- The Truck Wash must be designed as an independent unit, which will not give way or distort. The sides or floor of the feature should not crack in the event of any ground movement underneath or nearby the feature. - The feature may be constructed form concrete, metal or any other suitable material on condition that the design conforms to condition 7(a) above. - All water pipers, pumps and connections should be installed either in the open, on the surface, or in service canals where these may be inspected or repaired without access problems. - The feature should be built to prevent any rainwater flowing into or towards the feature.	
Disturbance of surface geology and exposed surfaces for development foundation. Disturbance to subsurface geological layers. Contamination of ground and surface water as a result of spillages.	**Medium**	- The time that stripped areas are exposed shall be minimized wherever possible. - All measures to be taken to reduce accidental spills. - Strictly no discharge of pollutants (i.e. oil; fuels; concrete; cement etc.) should be permitted into the surrounding areas. - Washing of machinery or vehicles shall be done in designated areas only; - Any spills or leaks shall be cleanup immediately by means of following adequate management procedures.	**Low**
Soil erosion; loss of topsoil; deterioration of soil quality.	**Medium**	- The site is currently covered with hard surfaces/ cement therefore no topsoil exists on the site. - Should the development/ revamp take place during the rainy seasons erosion can occur on a temporary basis. All areas that might be susceptible to erosion should be protected by implementing the necessary temporary drainage works to prevent surface water from being concentrated in streams. - Any cleared areas to be effectively stabilized in order to prevent and control soil erosion.	**Low**
Air Quality			
Dust/ Air Pollution. Excessive dust pollution can be caused during the construction phase of the proposed development should it take place during the dry and windy seasons. Emissions caused by equipment, machinery and vehicles	**Negative/ Medium**	Dust pollution can be minimized by regular damping down of working areas, especially during the dry and windy seasons, in order to minimize and/ or avoid dust pollution that can cause a nuisance to adjacent properties and residents.	**Medium - Low**
Topography: Visual impact. - The contractor's site camp; site offices; construction vehicles etc. could potentially have a negative visual impact on the neighbouring properties and residents.	**Negative - Medium/ Low**	- The area around the property is mostly vacant except for the Fair Haven Guest house and Car Sale dealership to the east of the site, Spirit Word Ministries to the north and the residential area on the opposite side of the N12 to the south of the site. However, the contractors and managers should identify, prior to the construction phase; an area on the site that is demarcated for the site camp. - Storage facilities, elevated tanks and other temporary structures on site shall be located such that they have a little visual impact on local residents as possible. - Lighting on the construction site shall be pointed downwards and away from oncoming traffic and nearby houses. - Special attention shall be given to the screening of highly reflective materials on site. - If screening is being used, this must be moved and re-erected as the work front progresses. - The site must be kept clean to minimize the visual impact of the site.	**Low**

Visual impact of construction camp and activities	**Negative**	Proposed construction activities must be limited to development footprint site. Construction camp must be neatly fenced and construction site must be neat and tidy.	**Medium/ Low**
Construction activities and materials etc. can have a negative visual impact.	**Negative**	The site should be enclosed to limit and minimize the visual impact on the neighbouring properties.	**Low**
Builder's rubble being dumped on neighbouring properties.	**Negative/ Medium**	No dumping of builder's rubble will be allowed outside the boundaries of the site or on neighbouring properties. A specific area on site should be allocated for the building rubble to be collected by a registered contractor in order to cart it to a registered landfill site.	**Low**
Noise	**Negative**	- Noise will be created in the form of general construction noise i.e. earthwork machinery and other applicable tooling used for the establishment of the proposed development. - Construction work shall only take place from 6:00 am to 18:00 pm during week days and from 7:00 am to 14:00 pm on a Saturday. No construction work shall take place on Sundays and public holidays. - Construction vehicles are to be fitted with standard silencers prior to the beginning of construction. - Equipment that is fitted with noise reduction facilities (e.g. Side flaps, silencers etc.) will be used as per operating instructions and maintained properly during site operations. - Machinery and vehicles are to be kept in good working order for the duration of the project to minimize noise nuisance to neighbors. - At least 24 Hours' notice of particularly noisy activities must be given to residents/ businesses adjacent to the construction site.	**Medium/ Low**
Traffic and Roads			
Traffic.	**Negative**	Increased activity and traffic at the property including the delivery of materials and team movements should be strictly limited to working hours.	**Medium/ Low**
Access routes	**Negative**	- Sound environmental principles must be followed in terms of construction access to the site. - All roads for construction access must be planned and approved ahead of construction activities. - Movement of vehicles and machinery around the site must be restricted to within the work zone demarcated during site establishment (and maintained throughout construction). - Contractors shall ensure that access roads are maintained in good condition by attending the potholes, corrugations and stormwater damage as soon as these develop. - If necessary, staff must be employed to clean surfaced roads adjacent to construction sites where materials have been spilt. - Unnecessary compaction of soils by heavy vehicles must be avoided; construction vehicles must be restricted to demarcated access, haulage routes and turning areas. - Cognizance of vehicle weight/ dimensions must be taken when using access constructed out of certain materials. E.g. Paved surfaces/ cobbled entranceways.	**Low**
Vehicular access and movement of construction vehicles.	**Negative**	The following mitigatory measures are deemed necessary to ensure safe and efficient traffic flow to and from the site, during construction: - Posting of relevant traffic signage where construction will take place (to inform motorists of construction vehicles); - Adequate parking shall be provided on site, to accommodate construction vehicles; and	**Low**

		- No vehicles should be parked in any public road reserve, at any time.	
During the construction phase; traffic volumes will increase along the approach roads which may result in vehicle/ pedestrian collisions and degrade the road condition.	**Negative**	- Residents/ neighbouring property owners should be made aware of the presence of construction vehicles through highly visible signage. - Construction vehicles; wherever possible; should be limited to low volume periods; - Road conditions should be recorded prior to construction vehicles making use of the roads and any damage caused by construction vehicles should be repaired immediately.	**Low**
Infrastructure and Services			
Provision of infrastructure and services.	**Positive**	- Even though all the necessary infrastructure and services are in place it will be necessary to obtain the required agreements and confirmation of capacity of services prior to the proposed development commencing; - Services Agreement to be set up and signed between the Developer and Council; - The Developer to ensure all the required upgrades and connections, if required, are undertaken as agreed with Council.	**Medium**
Socio-Economic and Cultural Historical Environment			
Aesthetics; landscape character and sense of place.	**Negative**	The site will be fenced of which will reduce the visibility from the neighbouring properties onto the site. The Site Manager and Contractors shall however still locate the site camp at the least visible position on the site in order to further minimize the negative impact onto the neighbouring properties as far as possible. Temporary storage sites must be least visible from the neighbouring properties as far as possible. The site camp and the rest of the site shall at all times be kept neat and tidy and waste will be removed from the site on a regular basis.	**Low**
Increased temporary jobs during construction	**Positive**	Local contractors, employing or seeking to employ local (historically disadvantaged individuals from the region who are suitably qualified, should get preference.	**High/ Medium**
Optimization of the local economy	**Positive**	Where appropriate, use should be made of labour intensive construction methods. Local workers and emerging contractors should be used if at all possible.	**High**
The potential impact of the proposed development on archaeological, paleontological and heritage remains	**Negative**	- Even though it is least expected, should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted. - Attention is drawn to the following measures listed below should any of the developer's permanent employees; its subsidiaries; contractors and subcontractors and service providers find any heritage or archeological artefacts etc. ★ If during the construction phase; of this project; any person employed by the developer; one of its subsidiaries; contractors and subcontractors; or service provider; finds any artefact of cultural significance or heritage site; this person must cease work at the site of the find and report this find to their immediate supervisor; and through their supervisor to the senior on-site manager. ★ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find; and confirm the extent of the work stoppage in the area. ★ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a	**Low**

		professional archaeologist for an assessment of the finds who will notify the SAHRA.	
Social well-being and quality of the environment / General/ Other			
Safety and Security.	**Negative**	- Potentially hazardous areas such as trenches are to be demarcated and clearly marked with appropriate signage/ danger tape/ mesh. - Lighting on site is to be set out to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residents or businesses. - Flammable materials shall be stored as far as possible from adjacent residents/ businesses. - Fire fighting equipment shall be present on site at all times as per OHSA. - The site is fenced off which will assist with the security of the site and neighbouring properties. - No worker shall be allowed on the adjacent properites. - No workers shall be allowed to stay on the construction site.	**Low**
Safety on site	**Negative**	The implementation of an Occupational Health and Safety management system should be required of all contractors. Safety measures and work procedures/ instructions should be communicated to all construction workers. First aid facilities shall be on hand at all times. Medical screening of employees shall take place. The contractor shall implement adequate and mandatory safety precautions relating to all aspects of the operation. Warning and advisory signage should also be implemented (also with regards to vehicular movement along public roads).	**Medium/ Low**
Waste.	**Negative**	- All waste must be removed from the site and transported to a registered landfill site. - Construction rubble shall be disposed of in pre-agreed, demarcated spoil dumps that have been approved by then Project Manager and ECO, or at registered landfill sites.	**Low**
Waste handling	**Negative**	Contractors should remove all waste generated by themselves during construction and it should be disposed of at a registered landfill site. Waste material will be kept in designated areas.	**Low**
General substance and materials - Handling of general waste	**Negative**	- The excavation and use of rubbish pits on site is forbidden. - Burning of waste is forbidden. - A fenced area must be allocated for waste sorting and disposal. - Individual bins/ skips for different types of waste (e.g. “household” type refuse, building rubble, etc.) shall be provided. - Refuse must be placed in the designated skips/ bins which must be regularly emptied. These shall remain within demarcated areas and shall be designed to prevent refuse from being blown out by wind. - Littering on site is forbidden and the site shall be cleared of litter at the end of each working day. - Recycling is to be encouraged by providing separate receptacles for different types of waste and making sure that staff are aware of their uses.	**Low**
Disposal of Waste	**Negative**	- All waste must be removed from the site and transported to a registered landfill site. - Construction rubble shall be disposed of in pre-agreed, demarcated spoil dumps that have been approved.	**Low**
Contractors' yards and maintenance of construction camp	**Negative**	- A material delivery and storage area should be demarcated in co-ordination with the contractor. Material should not be brought onto a site prematurely, which could result in additional areas being cleared or affected.	**Medium/ Low**

		- The construction camp must be maintained in good order throughout the construction phase. - The construction camp is to remain fenced and secured for the duration of the construction phase. Perimeter fencing is to include a shade cloth barrier that prevents visual nuisance, dust movement and any waste/ litter in the construction camp area from being blown out. - The Contractor must attend to drainage of the camp site to avoid standing water and/ or soil erosion. - The contactor shall ensure that his camp and parking areas are kept clean and tidy at all times. - The contractor to appoint someone to ensure that at the end of each day, all litter throughout the site is picked up and placed in the bins provided.	
Mixing cement	**Negative**	Where cement and concrete, etc. is mixed on site, this shall be done in specified areas on concrete aprons or on protected plastic linings and provision shall be made to contain spillage or overflows onto soils.	**Medium/ Low**
Mixing of chemicals	**Negative**	The mixing of any paints, solvents, sealants, adhesives, chemicals or other noxious materials shall only be undertaken in designated areas on concrete aprons that have spillage control channels and separate storage areas. The mixing of materials shall not be permitted in the general areas of the site. All surplus or waste materials are to be removed from the site. All these operations shall only be allowed on site under strict observations of the manufacturers' instructions.	**Medium/ Low**
Storage areas	**Negative**	- Materials Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs shall additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. - Hazardous storage and refueling areas must be bunded with an impermeable liner to protect groundwater quality. Bunded areas must have a capacity of at least 150% of the volume of the container storing the substance. Bunded areas to be constructed of concrete blocks lined with suitably dense plastic sheeting. Refueling/ hazardous material decanting areas can be protected with a portable metal sheet having a lip on all sides sufficiently high to contain potential spillages. - Fuel and oil storage tanks must meet relevant specifications and be stored on an impermeable base with an oil tight bund. Fuel tanks shall be elevated so that leaks may be easily detected. - Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity. - Storage areas containing hazardous substances/ materials must be fenced, clearly demarcated and required signs displayed. These areas are to be kept under lock and key. - Fire prevention facilities must be present at all storage facilities and be easily accessible at all times. - Staff dealing with these materials/ substances must be aware of their potential impacts and follow the appropriate safety measures. - Contractors shall submit a method statement and plans for the storage of hazardous materials and emergency procedures to the ECO and Project Manager for approval prior to brining the materials on site.	**Low**
General substance and materials - Storage areas.	**Negative**	- Choice of location for storage areas must take into account prevailing winds and general on-site topography.	**Low**

		- Storage areas must be designated, demarcated and fenced if necessary. - Storage areas shall be secure so as to minimize the risk of crime. They shall also be safe from access by children/ animals etc. - Fire prevention facilities must be present at all storage facilities.	
Disposal of Hazardous Substances and materials	**Negative**	- Hazardous waste disposal must be carried out by an approved hazardous waste contractor. - Waste from chemical toilets shall be disposed of regularly and in a responsible manner by a registered chemical waste contractor. Care must be taken to avoid contamination of soils and water, pollution and nuisance to adjoining areas. Certificates of disposal to a licensed wastewater treatment works required.	**Low**
Silencing of plant	**Negative**	All plant and vehicles on the site will be equipped with noise suppressing measures and kept in proper working order. Where working at the site, noise levels must be within ambient noise level. Excessive noise from the labour force should be avoided, as this may cause a nuisance to adjacent areas.	**Medium/ Low**
Maintain vehicles	**Negative**	Vehicles and equipment shall be maintained in proper working order, in order to limit gaseous emissions, pollution and should be free from oil and hydraulic fluid leaks, etc.	**Medium/ Low**
Cleanliness	**Negative**	The site is to be maintained in a sanitary conditional and all toilet facilities shall be maintained in good order. Food cooking will be permitted in designated areas.	**Medium/ Low**
Fires	**Negative**	No fires will be permitted on the site without the authority of the resident engineer or project manager.	**Medium/ Low**
Toilet facilities	**Negative**	- The use of portable chemical toilets for use by the labour force is essential to avoid pollution and attraction of vermin and flies (which could become a nuisance or a health hazard). - Temporary chemical toilets must be provided for duration of construction phase. - One toilet is required for 10 people. - Chemical toilets are to be maintained in a clean state and shall be moved to ensure that they adequately service the work areas. - The construction of “long drop” toilets is forbidden.	**Medium/ Low**
OPERATIONAL PHASE			
Potential impacts:	**Significance rating of impacts (positive or negative):**	**Proposed mitigation:**	**Significance rating of impacts after mitigation:**
Impacts on the impoundment located south western border outside the site boundary. This may due to pollutants entering the water resource, specifically petroleum related waste products which could possibly spread from the road access points, during construction or during operational phase from sources such as the parking zones, or other vehicle related zones.	**Medium**	- Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. - Adhere to all management and mitigation measures as prescribed within the EMPr. - If possible, find an alternative placement for features where possible as to prevent placement within the impoundment or impoundment soils. The impoundment and 10m buffer of the impoundment should be sufficient to protect ecological functioning of the area. - Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. - Prevent impacts from reaching downstream water resources by ensuring installation and proper functioning of stormwater management systems, which should include oil traps. - Continuous rehabilitation of the area should occur, as well as monitoring as prescribed.	**Low**

		- Ensure proper stormwater management and maintenance of this system. Stormwater management will prevent impacts reaching the natural environment.	
Ground and surface water contamination: • Contamination of ground and surface water as a result of spillages and leaking equipment and underground tanks; • The installation of underground fuel tanks has the potential to contaminate groundwater in the unlikely event of any leaks or seepage that traverse below the water table; • Sedimentation and water pollution due to wrong stockpiling of excavated materials. • Spillages and tank leakages can lead to soil pollution. • Chemicals; soap etc. can end up in the storm water by means of washing equipment or paved surfaces. •	High	- It is important that an Emergency Plan from the relevant fuel company be implemented. This Plan will be given once the relative fuel company signed the contract with the applicant/ owner. - All surface areas should be paved where storage tanks and peripheral infrastructure are to be placed in order to prevent ingress of contaminated water into the ground. - Flexible coupling should be provided for all pipes and connections to prevent spillages from occurring. - - Designated area to be identified for construction vehicles to refuel and it should be done on impervious surfaces. All constructions vehicles should be in good working order; - Construction machinery should also be in good working order to avoid any oil leaks etc.; - Designated area to be identified where cement can be mixed on impervious surfaces; - Any chemicals or hazardous materials on site should be stored in a designated area and should be locked away. This area should be bunded to trap and store; by means of a container; any excess water or spillages. - Contaminated soil and building waste must be removed after construction. - Pressure valves and fuel pumps should be maintained in order to detect any possible leakages. - Oil and grease traps should be emptied on a regular basis and it should be regularly charted to a hazardous waste landfill site. - Impermeable paved surfaces should be maintained in order to prevent leakages into the ground. - It's important to ensure that polluted water are separated from storm water. - Dirty cleaning water should be discharged of in the municipal sewer system.	Low - Medium
Generation of grey and brown waste water.	**Medium**	- Connect to municipal infrastructure (sewerage and stormwater).	**Low**
Hazardous liquid surface spills (refuelling incidents, spills caused by leaking truck fuel tanks, filling of portable containers, filling of underground storage tanks, leaking aboveground storage tanks).	**High**	- Areas susceptible to contamination or tanker off-loading points, should be impermeable to hydrocarbons. Run off must be controlled by appropriate drainage to a oil/ water separator connected to a sewer. Appropriate bund area around above ground fuel tanks as per industry standards. Adequately trained persons in Emergency Spill Response Procedures.	**Low**
Hazardous liquid subsurface leaks (leaking underground infrastructure, e.g. fuel tanks, coupling, pipelines, etc.).	**High**	- SANS codes must be applied during the construction of the filling station. Routine maintenance Y inspections as per industry requirements. Proper stock reconciliation.	**Low**
Stormwater - Development will have impermeable surfaces (paving roads, etc.) enhancing stormwater run-off which will reduce direct recharge to groundwater beneath these surfaces.	**High**	- Stormwater run-off must be addressed by the design engineers to adequately manage run-off (including water pollution prevention). Paved surface area at filling station is insignificant in size compared to larger catchment area.	**Low**
Pressure on existing infrastructure and services and Management and monitoring of services (water and electricity)	**Medium**	- Integrity of existing services in the area to be ensured - The consumption of water should be limited and monitored as far as possible. - Alternative uses of water (i.e rainwater for non-potable water requirements) should be considered. - Monitoring and maintenance of all water reticulation infrastructure should be implemented to ensure that no leakages occur. - No unnecessary use of electricity. Where ever possible electricity should be saved and used wisely.	**Low**

		- Energy efficient electrical appliances for instance fridges; air conditioners and heating systems are suggested. - Energy saving lighting and time switches should be used where ever possible. - Back-up generators are suggested during times of load shedding.	
Generation of domestic waste. - Waste should be separated into clearly marked categories and disposed of in dustbins. - Recycling should take place wherever possible.	**Medium - High**	- Removal of Domestic Waste on a regular basis by accredited contractor and disposed/ recycled at licensed landfill/ recycling facility.	**Low**
Waste management – Hazardous - Large numbers of vehicles will enter and exit the site. Some of the vehicles may be leaking oil and fuel which enter onto the site. In addition this hazardous waste will be generated during the cleaning of oil separators and may occur as a result of spilt fuel o oil during refuelling or servicing of vehicles.	**High**	- All materials such as soil; sandbags; fibres etc. must be disposed of in an appropriate hazardous waste landfill site. - Any Methanol or water mixtures that are used for the removal of any residual water from fuel tanks should be safely disposed of. - Any materials that contains spilt must be disposed of at a suitable licensed waste landfill site. - Hydrocarbons trapped in oil traps are to be removed. - All hazardous chemical should be stored in their original containers. - Compliance with the Hazardous Substances Act 1973 (Act No. 15 of 1973) as well as SANS 10089 and SANS 10228 should be adhered to at all times for any handling, storage or transportation of any hazardous and flammable substances.	**Low**
Repair to fuel tanks. - Ignition of vapor due to repair. - Leak due to faulty repair.	**High**	- Competent contractors should be appointed to conduct the repairs. - Cordon off and control ignition sources in areas around tanks.	**Low**
Pipework Control Measures to control and eliminate risks. - Fuel/ vapor in pipework – Leak through pipe wall. - Leak from pipework fittings.	**High**	- Visual examination of accessible parts should be carried out. - Regular inventory checking should be carried out. - A constant monitoring device should be installed. - A leak prevention and detection system to be installed. - Periodic leak testing of any sections of pipework not covered by a leak prevention/ detection system according to the age and type of pipework (i.e. vent pipes) should be carried out. - Ensure regular maintenance and test monitoring and or leak detection systems are in place and carried out. - It is suggested that non-corrodible or double skin pipework is used.	**Low**
Emergency procedures - Operation of flammable liquids on site poses a potential fire and explosion risk. - Smoking on the premises. - Handling of cell phones near fuel pumps. - Health and Safety risks due to vehicular movement. - The cooking of the convenience shop and take-away outlet can cause a risk.	**High**	- The Occupational Health and Safety Act 1993 (No. 85 of 1993) and all other relevant legislation pertaining to South Africa regarding the health and safety of people should be adhered to and complied with. - No smoking or handling of cell phones should be allowed near highly flammable areas. It should be prohibited near flammable substances. - Isolation/ shutdown procedures should be followed. - Individual should trained and be aware of their responsibilities as well as how to act in the event of emergencies. - Emergency service numbers should be visible and in an area where is easily accessible for emergency. - Evacuating the site in the case of an emergency. - Fire fighting equipment i.e. fire extinguishers and firewater tie-in points should be available on site and stored in an area where it can easily be accessed in emergencies. - First aid kits shall be kept on site. - All staff members shall be trained and aware of emergency/ contingency plans to ensure a clear understanding of the hazards on site as well as the	**Medium/ Low**

		necessary procedures to be followed in the event of an emergency. - An emergency preparedness and response plan shall be implemented. - Kitchens shall also be equipped with the necessary safety and fire-fighting equipment. - Clean-up procedures shall be known to all staff members. - A record of all incidents related to health and safety shall be maintained and kept on site.	
Socio economic - A number of job opportunities will be created for skilled and un-skilled workers within the local community. A number of temporary jobs will also be created during the routine maintenance procedures. - The proposed filling station will provide additional choice and convenience for people and businesses in the immediate surrounds. - The filling station with its convenience store is likely to create a profit from the sale of fuel; food; drinks and other goods. This will indeed contribute to the overall economy of the area.	**Positive**	- No mitigation required.	**High**
Disturbance of the public and neigbouring properties. - The truck stop and filling station and convenience store will generate noise on a 24 hour basis. - Vehicular movement to and from the site will also generate noise; but should be similar to that what is experienced at the moment.	**Medium**	- Noise levels can have an impact on the neighbours (Fair Haven Guest House). However workers should not generate additional and unnecessary noise by playing loud music and especially not during the night time. Whistling should also be prohibited especially after 18:00 in the evenings.	**Medium**
Safety and Security	**Medium - High**	- Adequate training to staff on how to deal with crime. - Adequate training to staff about safety procedures. - Adequate training to staff on how to handle an emergency situation and have the Emergency Plan with the relevant contact numbers of police; fire brigade etc. readily available and at hand.	**Low**
Lighting from the Truck Stop and Filling Station can be a hindrance or visually intrusive	**Medium – High**	- Where ever possible light pollution should be minimised; - Lighting should be sufficient for safety and security however caution to be taken as for the lighting to not be intrusive to neighbouring properties and interfere with the road traffic on the N12.	**Low**
Traffic – trucks and vehicles from the Truck Stop and Filling Station	**Medium - High**	Compliance to the Traffic and Municipal By-Laws.	**Low**

Cumulative impacts

Cumulative environmental impacts considers the combined results of past; current and future activities on the site and also looking at the direct and indirect human activities over time; that are combined to collectively impact on the environment.

The biodiversity and vegetation impacts can be mitigated to acceptable levels if the necessary mitigation measures are in place and adhered to.

No impact of cultural/ historical aspects are foreseen.

It is also of utmost importance that a suitably qualified specialist ensure that all the tanks are bunded and according to the SANS specifications in order to be leak proof. All the necessary Maintenance and Management Plans (Dolomite Risk Management Plan; Groundwater Management Framework) should be strictly adhered to and followed in order to ensure that there is little to none impact on stormwater and no groundwater due to spillages and leakages occurring from the tanks.

No significant negative visual impact is expected as the proposed truck stop and filling station will be aesthetically pleasing to the eye.

Noise will be generated during both the construction and operational phase but the impacts can be mitigated to acceptable levels.

Dust might be a problem during the construction phase nevertheless it will be possible to mitigate the impacts.

The cumulative impact on the traffic is expected to be minimal as the proposed site will not generate a significant increase in traffic on the roads. Construction vehicles should pose to do deliveries out of peak traffic times.

Emergency incidents for example spillages associated with filling stations are not excluded, however if all the precautions and mitigation measures are followed the risk will be significantly reduced.

There are a number of competitor filling stations in the area but according to the Feasibility Study the proposed site will be feasible and should not irreparably jeopardize the businesses and with the positive growth in the area it will be possible to recover within a 3 to 5 year period of the new truck stop and filling station being implemented.

The local community will benefit in a positive way from the filling station and truck stop as it will be convenient to fill up their cars with fuel close to their homes and for the trucks being convienient to freshen up and be at a facility that is safe for them to get some rest and as mentioned before there are no other truck stops with all the other amenities included between Klerksdorp and Potchefstroom.

The truck stop and filling station and other amenities will generate a number of employment opportunities on a temporary as well as a permanent basis during both the construction and operational phase of the project. This will add in a positive manner to the economic development of the area.

11.2 ENVIRONMENTAL IMPACT STATEMENT

The assessment of potential impacts were taken into account and an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Proposal – Truck Stop and Filling Station

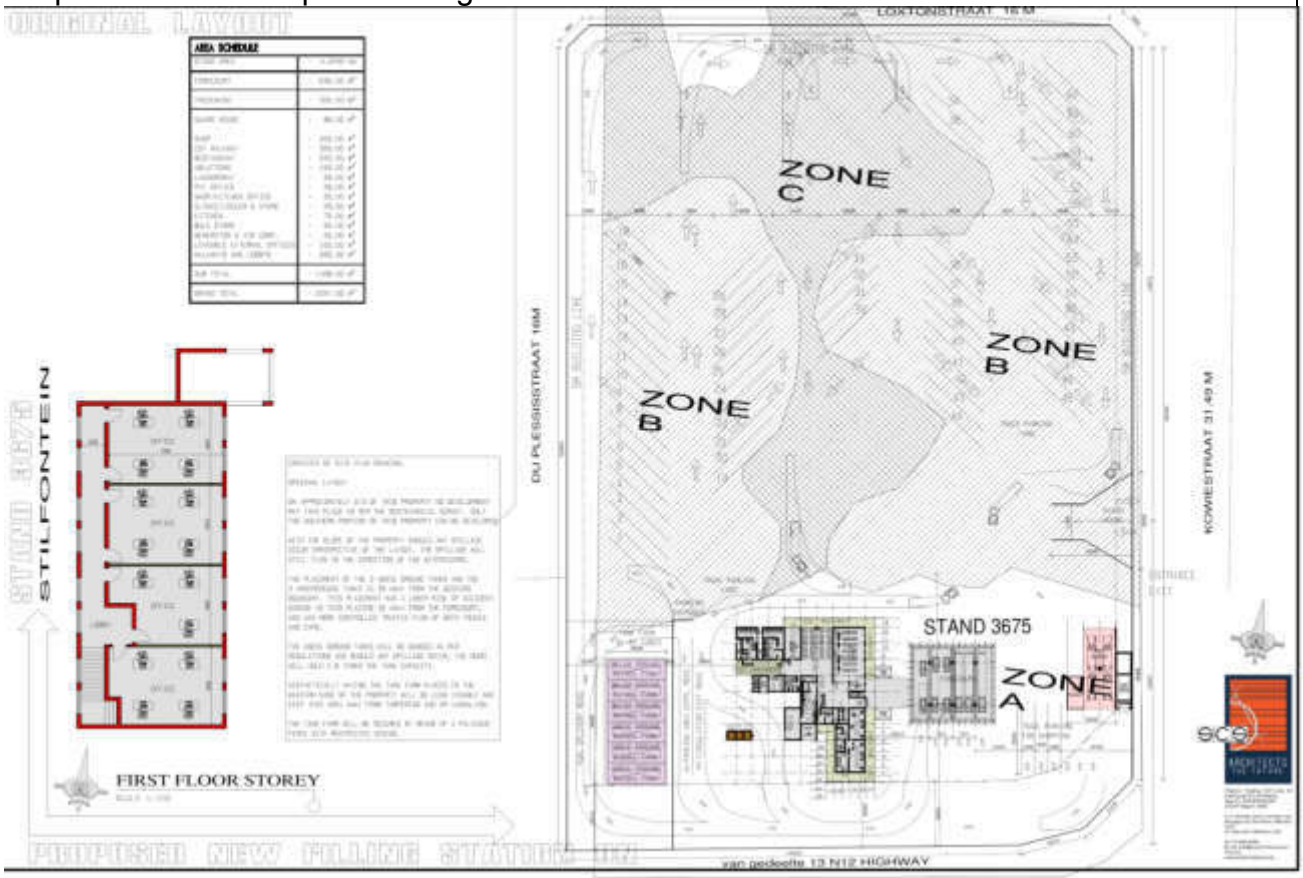


Figure 41: Proposed Layout

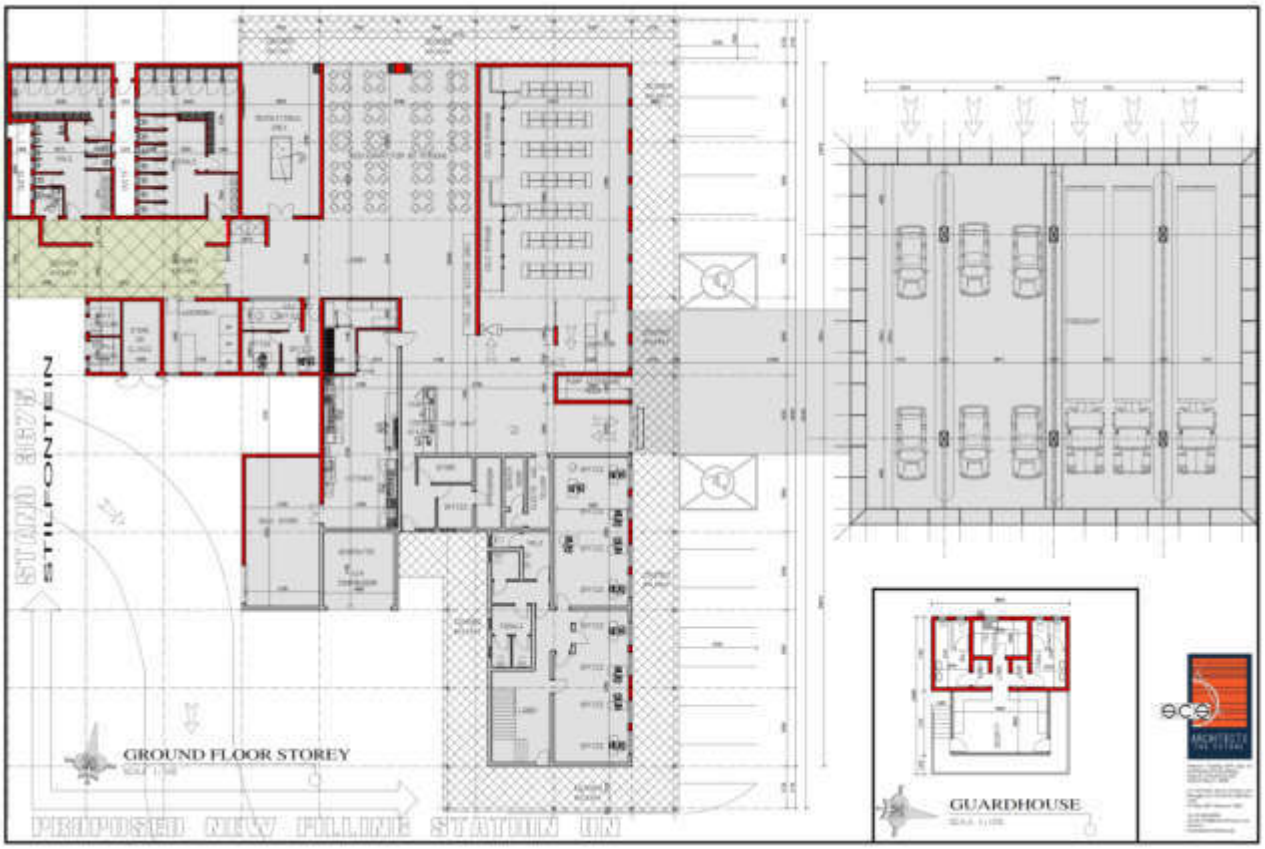


Figure 41: Proposed Layout Plan

The Environmental Impacts to occur on the site as a result of the proposed filling station and truck stop is regarded to be short term in nature. The main impacts to occur is considered mostly during the construction phase. The impacts include an increase in dust, noise and the generation of waste materials. A significant increase in traffic due to the construction phase is not envisaged as Kowie Street has been in operation for years already and the number of construction vehicles moving in and out of the site will not add that much additional traffic on the roads.

During the construction phase it is important that all construction activities should be undertaken according to generally acceptable environmental best practice as per the Environmental Management Programme. If the mitigation measures are being adhered to the expected impacts will result in being mitigated successfully and to acceptable levels.

<u>Ecological:</u>
The grassland will always have elevated sensitivity; especially if it is still considered to have a natural composition. It will be necessary to obtain a permit to remove any *Vachellia erioloba* (Camal thorn) trees which is a Protected Tree in terms of the National Forest Act (Act no. 84 of 1998).

Ten plant species have cultural and/ or medicinal use. Eleven of the 49 plant species observed on site is not indigenous to South Africa and eight are listed as alien and invasive plant (AIP) species in NEMBA, 2004 (Act No. 10 of 2004).

The area has been largely transformed and only typical urban avifaunal species were sighted during the field assessment. Smaller mammals were also observed, but the faunal community has been vastly impacted and the habitat support offered by this area is seen as very low. Several foot paths were observed during the field assessment based on the fact that humans will utilise the park to cross towards the other side of the road. A historic depression or shallow pan (impoundment as classified by the Wetland Specialist) occurs outside towards the south western borders, but little water remains and the area seems to be utilised as informal dumping terrain, specifically building rubble. An informal road also crosses the site and this road is also utilised by the truck stop (or similar facility (located directly north) of the development footprint).

No National Species of Conservation Concern (SCC) for fauna were sighted or thought to occur due to the nature of the vegetation units and associated habitat. Those listed provincially are all species that may be hunted with landowner consent and do not constitute formal protection in terms of permits required.

If any camel thorn trees are removed a permit should be obtained beforehand.

The Ecologist confirmed that the development may continue in their opinion if all mitigation measures are implemented.

Impoundment:
As mentioned previously the Wetland Specialist confirmed that a historic impoundment exists just outside the boundary of the site to the south western corner. The wetland study confirmed that the impoundment on the site was excavated and is currently being used to accommodate what appears to be stormwater runoff or similar water. This fact has been confirmed by the Project Engineer as he mentioned in an email that the stormwater from the entire Stilfontein drains into the impoundment. From a soil; land surface and historical condition of the site the only conclusion done by the Wetland Specialist is that there are no natural wetland present on the site. The impoundment is man-made and the soil conditions do not indicate the presence of any natural wetland conditions. As this impoundment is a man-made structure and no wetland signatures present the 500 meter radius from a wetland in terms of the National Water Act; Act 36 of 1998 will not apply to this application.

After receiving comments from NWDEDECT regarding a buffer around the impoundment, consultations took place between the Ecologist; Wetland Specialist and the EAP. The Ecologist referred us to the Wetland Specialist as they were not appointed to conduct the Wetland Study and therefore the reason for recommending that the Wetland Specialist should impose a buffer around the impoundment. The Wetland Specialist confirmed that although the impoundment is a man-made feature; it is proposed that the buffer will be aimed at ecological features of this structure and suggested a 10m buffer. The main reason

being that there are distinct signs of soil disturbance in this section and that it would be difficult to assign any ecological or hydrological functioning of the site and soils outside of the 10m buffer area. The ecological functioning can be maintained by the 10m buffer and the maintenance of the current water regime feeding the system. The entire study area will fall outside of the 10meter buffer of the impoundment and will therefore have no impact on the layout plan.

Stormwater will no longer be attenuated and diverted into the impoundment but rather managing the surface runoff; channels; and stormwater pipes. The site will manage runoff to a field inlet where it will drain into a pipe. There is a connection point just east of Kowie Street; where the proposed pipeline will connect to. Therefore no Water Use License will be required for this proposed project.

Heritage:
It is not expected that any heritage or archaeological artefacts will be present on the site. If any is found during the construction phase the correct procedures as per the Environmental Management Programme should be followed.

Geology:
The site is underlain by and Shale; Sandstone or Coal of the Ecca Group, Karoo Sequence and bordered by Dolomite of Malmani Subgroup, Chuniespoort Group.

The bulk of the site is in fact underlain by Dolomite; whilst the southern part where the various structures; such as diesel pumps & canopies; convenience store & offices, as well as the tank farm, is to be located, is underlain by Sandstone.

The site can be divided into three geotechnical zones; namely:

- Zone A: D2 CLASS 2(1)//1 : A low probability for any size sinkhole forming and a low probability for subsidence are the hazard characterisation assessed for both non-dewatering and dewatering scenarios. Commercial development may be considered.
- Zone B – D3 CLASS 3(5)//1: A medium to high probability for small size sinkholes; a medium probability for medium size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios. Commercial development with limited restrictions may be considered.
- Zone C – D4 Class 7(6)//1: A medium to high probability for small; medium and large size sinkholes forming and a medium to high probability for subsidence are the hazard characterisations assessed for both non-dewatering and dewatering scenarios. Commercial development restricted to storage facilities and surfaced parking.

Stringent precautionary measures must be implemented.

The importance of careful water management cannot be over-emphasised as poor water control in one area may lead to some form of instability in another area. Recommended precautionary measures as per the Geotechnical Study are included in the EMPr..

Geohydrology:
Based on the field work, interpretation of available and newly acquired data, the construction and operational of the truck stop and filling station will have an overall "negligible – negative" impact on the investigated geohydrological environment after implementation of appropriate mitigation measures. During the rating and ranking procedure of impacts; all identified impacts could be countered by appropriate mitigation.

Of particular importance, is the presence of sensitive receptors (boreholes used for human consumption) within 100m and downstream from the proposed project. Best management practices is incorporated into the Environmental Management Plan (EMPr) to minimise the risk of groundwater contamination.

No abstraction of water will be allowed on the site due to the sensitive nature of the underlying karst aquifer and the potential risk of dewatering and sinkhole development.

The groundwater should be monitored in order to address the management and mitigation measures of the groundwater impacts resulting from the construction and operational phase of the truck stop and filling station.

For both the Geotechnical and Geohydrological aspects of the site it is of utmost importance that a suitably qualified Engineer be appointed to assist with the installation of the underground tanks as well as the above ground bunded areas in order to ensure that all installations of pipes; machinery; equipment etc. be done in accordance to SANS standards and in order to ensure no leaking will occur. Monitoring of the tanks and groundwater should be monitored on regular intervals (suggested every 6 months) to ensure no leaking takes place.

Social:
The social impacts seem to be more beneficial than adverse to the local community. The main factors; as mentioned above; that might have a negative impact on the local community during the operation phase is the visual, noise; waste; air and odour pollution. The impacts can be mitigated to acceptable levels which will not be regarded as a hindrance to the surrounding properties. Remembering the adjacent properties to be directly affected by the proposed project is the Fair Haven Guest House; U park; We sell it; car sales; Spirit Word Ministries and currently vacant land to the immediate north and to the west of the site. Possible spin-offs will be generated to other related activities to the benefit of numerous job opportunities that will be created for the local work force during the construction and operational phase of the project as well as economic activities and related services.

This facility furthermore provides proper illuminated parking areas with 24 hour surveillance that are securely fenced that prove a safe area for the truck drivers; their trucks and cargo. This facility will offer a safe area which will increase the comfort level of the drivers and severely reduce the road fatigue and the driver's attitude on the road. This will also reduce accidents on the roads and highway as the heavy vehicles will rather stop at this proper facility than turning off the road to sleep alongside the road whilst also obstructing vehicles

on the roads. This facility will furthermore allow the truck drivers to freshen up and get something to eat and drink at the convenience store and restaurants as well as utilizing the medical room “clinic” that will treat any minor ailments i.e. headaches; plasters etc. The secure and surveillance area in the parking will also furthermore reduce access for ‘night workers’. The filling station could also be convenient for the workers and parents of the Schools situated at the Spirit Word Ministries. During the Public Participation a few of the workers mentioned that it will be beneficial and convenient if they can fill up at this facility. The location of the site is regarded as being ideal for purposes of the proposed development.

Services:
City of Matlosana confirmed that they have the capacity to supply water to the site and a municipal water connection is available in close proximity to the site. The Municipality suggested two options for the sewer. Either by pipe jacking it under the N12 or alternatively by utilizing a Septic Tank. Either way the Municipality confirmed capacity for the treating of sewer. The Engineer investigated both options and both seem to be workable from an Engineering point of view. From an Environmental point of view a municipal connection would be preferred. Eskom confirmed they have capacity for electricity for the site.

Layout Plan:
The proposed layout plan considered all the comments and recommendations of all the specialists. All sensitivities, especially the geotechnical and dolomite conditions of the site were taken into account to produce this layout plan. As can be seen on the layout the area to the south of the site is utilized for all the facilities the remainder of the site will be paved. The area to the south is also suitable for development from a geotechnical point of view. The area to the centre and moving in a northern direction to the site boundary towards the north will only be paved and some area with less sensitivity will be utilized for parking. All dolomitic areas are clear from any activities. It will be noted the entire study area will be paved/ tarred for no possibility of any water being able to reach the underground. All water will be directed away from the site. The Geotechnical report clearly states that no water build-up will be allowed on the site and needs to be drained and channelled away. This layout plan is considered to be acceptable from an environmental; ecological, geotechnical; geohydrology; traffic; feasibility and engineering point of view should all the mitigation measures being implemented. Council of Geoscience is also in support of this layout plan.

From an Architectural as well as an aesthetic point of view this layout seems to be the most feasible option by having the tank farm placed in the western corner of the site as it will be less visible and it will also keep this area away from tampering and or vandalism. The tank farm will be secured by means of a palisade fence with restricted access and should any spillage occur; the bund will be able to hold 1.5 times the tanks capacity.

Alternative 1 – Truck Stop and Filling Station

Figure 42: Alternative 1 Layout

The Environmental Impacts to occur on the site as a result of the proposed filling station and truck stop for Alternative 1 Layout is considered to be exactly the same as that of the Proposal. The only difference is that this layout does not included a truck and car washbay and it also did not consider the geotechnical constrains of the site (dolomitic conditions in the centre and to the north of the site). The entire area from the centre of the site all the way to the north is proposed for parking. The parking area with this layout is situated over the sensitive Zone C area. Council of Geoscience is not in support of the parking area within Zone C. This layout is also not supported from an environmental, geotechnical and geohydrological point of view.

Alternative 2 – Truck Stop

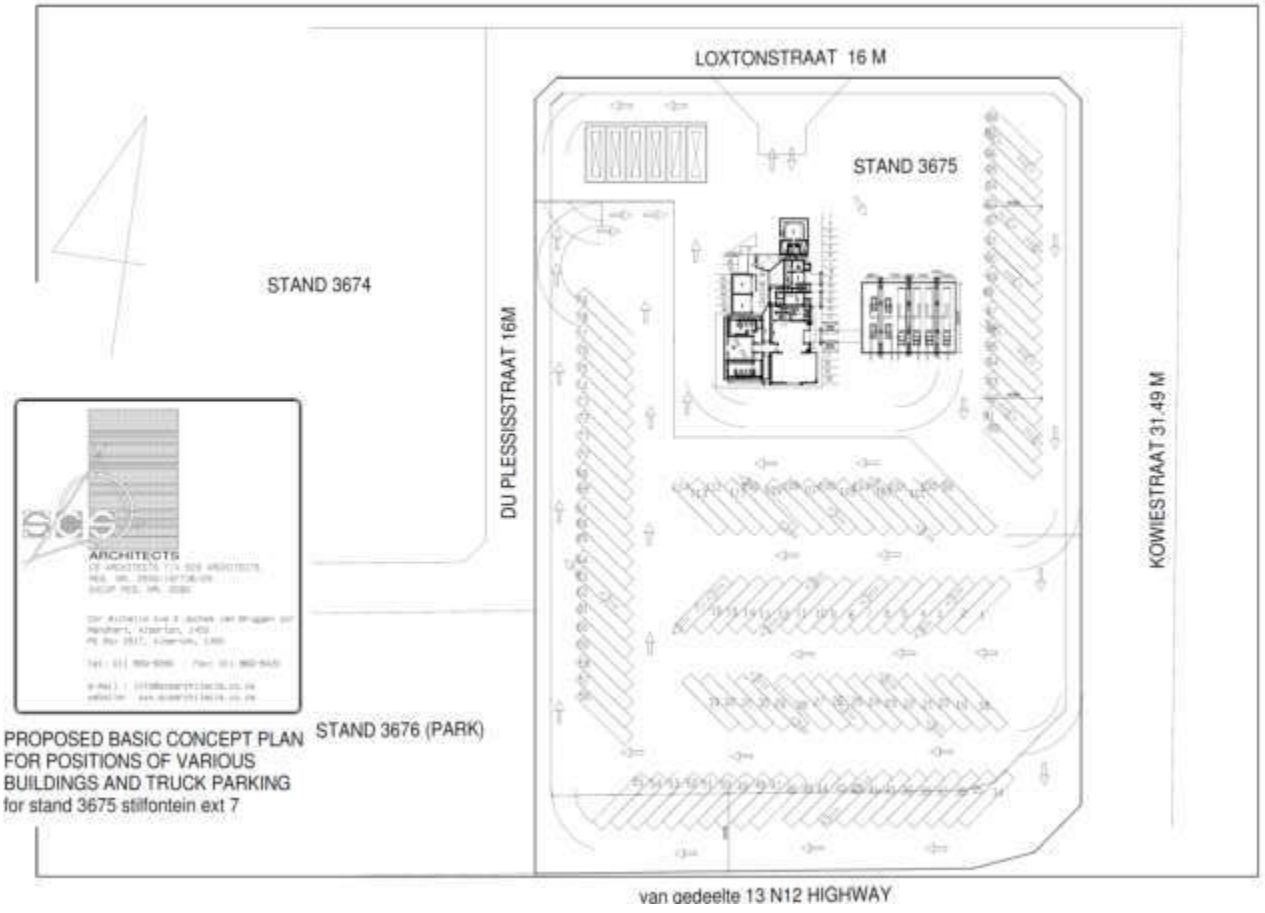


Figure 43: Alternative 2 Layout

The Environmental Impacts to occur on the site as a result of the proposed filling station and truck stop for Alternative 2 Layout is considered to be exactly the same as that of the Proposal. The only difference is the layout. This layout is completely turned around whereby the buildings and forecourt is situated to the northern boundary of the site with the parking area towards the N12. This layout is not favoured from a geotechnical; geohydrological; ecological and feasibility point of view and it most definitely is not supported by the Council of Geoscience as the buildings will be located directly within Zone C which is regarded as a dolomitic area

Therefore this layout is not favoured at all and seems to be the least favourable layout alternative of all.

Alternative 3 Layout

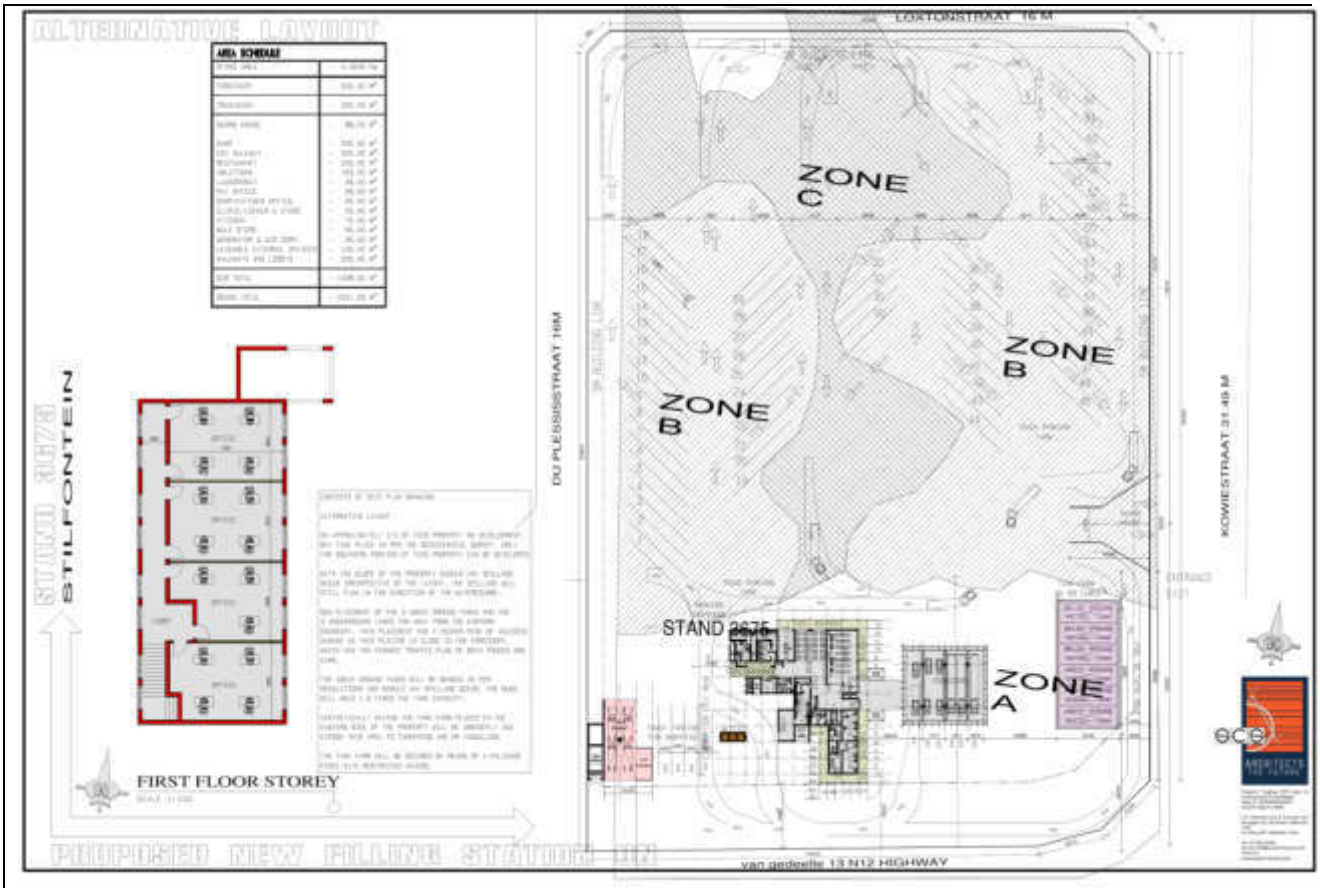


Figure 44: Alternative 3 Layout

This alternative is exactly the same as the Proposal and will have the same impacts except for the new placement of the 3 above ground tanks and the 3 underground tanks which is situated 10 meters away from the eastern boundary and the truck and car washbay that is situated in the south western corner of the site. Aesthetically having the tank farm placed in the eastern side of the property will be unsightly and expose this area to tampering and or vandalism. This placement has a higher risk of accident damage as this placement is close to the forecourt; which has the highest traffic flow of both trucks and cars.

This alternative along with the Proposal seems to be the most feasible alternatives to be consider however the Proposed Alternative is still regarded as the most feasible alternaivie.

No-Go

The no-go option means to “do nothing”. This means that the site will remain in its current state. From the outset the no-go option would be good if it can remain in this state in the future.

Should this option be considered one has to take into consideration that vacant land is an ideal attraction to illegal vagrants and also pose the risk that the site can be utilized as a dumping site. As reported in most of the specialist studies it is furthermore noted that the site is already utilized for illegal dumping in certain areas and especially the area where the

impoundment is located outside of the site. Even though the impoundment is located directly outside the study area to the south west of the site this area tends to have a spill over effect onto the N12.

No development would also mean that no service and infrastructure upgradings will take place in the area. There will also not be an influx in revenue for the Council and the residents in the area and no additional job creation will be generated. Therefore a total loss in taxes paid to the local municipality and economic revenue that the filling station and truck stop could potentially generate.

It should also be considered that there are no place for tired truck drivers to pull off between Klerksdorp and Potchefstroom. This means that tired truck drivers are on the road which is a danger to all other travellers on the road. Truck drivers also have no safe place nor area to refresh themselves and where they can be taken care off. This proposed truck stop and filling station can provide the ideal place for these truck drivers to rest and should they need any medical attention or medication the small clinic (only a room as part of the office section) can provide in these needs. This application could set a president for the rest of the country to implement along the roads especially in areas that has long stretches from one town to another. This “concept” will be beneficial for the overall safety of our roads.

The location of the site is furthermore ideal for purposes of a truck stop and filling station as it is situated directly adjacent to the N12 road. If the no-go option is chosen it would mean a total loss in potential business even though the zoning of the site is already for purposes of a filling station which is in line with the proposed application.

Decommissioning Phase

No decommissioning is envisaged.

However should it be required the impacts will be similar to those of the construction phase. It will also be important that a baseline contamination assessment be done, at that stage, to determine any impacts for example any soil and groundwater contamination. Soil and groundwater contamination will not be tolerated with this application during the operational phase due to the dolomitic conditions of the site. Therefore strict mitigation measures and Management Plans (Dolomite Risk Management Plan; Groundwater Management Framework) also as part of the EMPr will have to be followed and good maintenance and management needs to take place during the operational phase of the proposed application. If this is done no decommissioning/ closure or any contamination are foreseen.

11.3 IMPACT SUMMARY AND REASONS FOR SELECTING THE PROPOSAL OR PREFERRED ALTERNATIVE

The proposed layout plan was selected and identified as the most feasible from all the alternatives.
Considering the fact that the proposed layout took all the sensitive features and characteristics of the site into consideration as well as the benefits it far outweighs the other alternatives. As mentioned, Alternative 1 and 2 Layouts will not be feasible from a geotechnical point of view as development is planned over the highly sensitive Zone C which is earmarked for possible dolomitic areas. No development according to the Council of Geoscience will be allowed in this area and these two layouts are not supported by them nor the Geotechnical Engineer.

In terms of the No-Go option even though it seems as a feasible option it will not have as many benefits as the proposal. The No-Go option could potentially have severe negative effects in the future as no control are exercised over the property due to it being a vacant piece of land and as can be seen is already being degraded by means of illegal trespassing; dumping etc. This could potentially only worsen in the future.

The proposed truck stop and filling station will have numerous benefits from a social and economic point of view. As mentioned it will create an influx of revenue for the local Council and residents in the area as a number of job opportunities will be generated and the location of the site is found to be ideal from a feasibility point of view as well as from a business point of view. It is furthermore easily accessible as it is located directly next to the N12 and forms approximately the centre point between Klerksdorp and Potchefstroom.

The proposed truck stop and filling station will also assist with tired truck drivers getting them safely off the road at a facility that is safe for them and their cargo. They will be able to get rest, refreshed and even get minor medical attention should it be needed. They will be able to wash their trucks at this facility and fuel up before they take on the long road again. This will also be beneficial to all road users and travellers in this area as tired truck drivers can rather pull off the road than driving whilst being tired and not alert as they should be. At the end of the day this is something we should implement elsewhere all throughout the country to assist in making our roads much safer but also thinking of the safety of the truck drivers.

Considering all the above factors it seems that the no-go option in the long run and at the end of the day will be less feasible than the proposal, should all the necessary mitigation measures be strictly adhered to and successfully implemented. The proposal deems to be much more beneficial than all the other alternatives considered.

The implementation of the truck stop and filling station will also mean upgrading infrastructure and services in the area which is regarded as beneficial to the local community and Municipality.

Should all the necessary mitigation measures and plans be implemented there is no reason why this development should not be allowed to continue. From an Environmental point of view it is requested that the proposed filling station and truck stop be approved to continue.

11.4 Recommendation of Practitioner

After considering all the comments and information received from the I&APs as well as the assessment of the potential impacts it can be said that most of the impacts can be successfully mitigated to be less significant and to acceptable levels. It is however strongly recommended that the following recommendations be considered to form part of the conditions of the Environmental Authorization.

- The mitigation measures in the Environmental Management Programme (EMPr) are to be adhered to at all times.
- The EMPr should be implemented during the construction and operational phase of the project;
- An Environmental Control Officer should be appointed to monitor the site during the construction phase in order to ensure compliance with the EMPr.
- All chemical; flammable and hazardous substances should be stored in a designated bunded area and on an impervious surface.
- Recycling of waste should be promoted and where ever possible construction waste and materials should be recycled or re-used.
- Waste generated during the operational phase should be separated at source. Plastic; glass; paper etc. should be discarded in clearly marked bins.
- The SANS regulations should be adhered to for the proper installation and maintenance of storage tanks.
- Groundwater monitoring at regular (6 months) intervals.
- All staff must be aware of the Health and Safety regulations; Emergency Plan and the Operational Standards and guidelines and strictly adhere and comply with it.
- The manager should have an emergency preparedness procedure for all staff members. Staff should be trained and know exactly who should be doing what in the event of an emergency incident. An Emergency Plan should also be in the office where all staff members can have easy access to it. Emergency contact numbers should also be at a place where it is easily visible and accessible for in the event where it is needed.
- During the delivery of fuel the tanker driver should be present at all times during the offloading process.
- Should any spillages occur on site it should be cleaned immediately and properly and according to a spill management procedure. This procedure should include where possible; spill clean-up; collection of waste and waste water and the disposal thereof in the correct manner.
- All advertising boards on site should comply all the applicable regulations and by-laws.
- All energy saving appliances (fridges; air conditioners; light bulbs etc.) should be used where ever possible;
- As far as possible no discharge of waste water or fluids may be done through storm water channels.
- Ecological/ Terrestrial:

- A suitable responsible person should be appointed during the construction phase to ensure that no unnecessary ecological impacts occur or animal is harmed and no breeding ground or unexpected discovery of red listed/ sensitivity animals that may require relocation is handled incorrectly by uninformed personnel;
- Prevent the needless loss of or damage to flora particularly with regard to protected, endemic; near-endemic and rare species to keep the specific habitat type as unaltered as possible. This will include the active management of Alien and Invasive species around the perimeter and within the development footprint;
- Prevent death; injury or hindrance to any fauna encountered during the project phases, and particularly with regard to any possible protected or endemic species;
- Prevent impacts from reaching the downstream river environments at any stage of the development as these will impact the aquatic life within the systems as well as impact all the animals using the water resources as well as downstream impacts.
- Prevent impacts from reaching downstream water resources by ensuring installation and proper functioning of stormwater systems and drains to prevent contaminated water entering the natural environment. This will be prudent in this development, since petroleum and other hydrocarbons associated with the trucks and vehicle-based activities are likely to be spilled in the environment if not managed well.
- Implement an "observe and report" approach which will enable employees to report any disturbance of flora/ fauna or degradation that they encounter.
- Alien invasive awareness, eradication and control programme on an annual basis.
- Prevent significant alteration to the ecosystems in the area.
- Prior to removing any camel thorn tree a permit should be obtained.

- Impoundment:
  - From the soil, land surface and historical conditions of the site the only conclusion is that there is no natural wetland present on the site. The impoundment is a man-made feature and the soil conditions do not indicate the presence of any natural wetland condition. A 10 meter buffer around the impoundment should be imposed for biodiversity reasons; however the site is not affected by the 10 meter buffer and no entry to adjacent properties should be allowed.
  - No attenuation or stormwater may be diverted to the impoundment.
- Heritage:
  - There are no visible restrictions or negative impacts in terms of heritage associated with the site;
  - In terms of heritage the proposed project may continue; and the discovery of subsurface archaeological and/ or historical material as well as graves must be taken into account in the Environmental Management Programme; and
  - The Heritage Report should be submitted as a Section 38 Application to the relevant Heritage Authority for approval/ comment.
- Services:

  The following should be considered as part of the stormwater management:
  - All stormwater pipes to be laid at a minimum slope of 1:150.
  - Grid inlets or drainage to be provided by brick/ concrete walls.
  - All water from gutters and rainwater down pipes should be channelled away from the building into a stormwater drainage or grassed area away from any buildings.

- The system should be designed to be watertight. Lined surface channels area therefore preferred.
- No ponding of surface areas is permitted.
- All water system materials will be of HDPE quality materials and with flexible joints to be used.
- No plumbing and drainage pipes shall be placed under the floor slabs.
- Stormwater system will be designed to ensure ease of maintenance from time to time as recommended.
- It should be noted that the Geotechnical Report indicates that no groundwater was experienced during the investigation. Additionally, the groundwater is estimated to be 25m below natural ground level.

- Geotechnical and Dolomite:
  - The Risk Management Plan as part of the EMPr should be implemented and followed.
  - Boreholes should not be used for the extraction of groundwater because of the possible adverse effect dewatering will have on the area.
  - Water management (Yearly inspections and maintenance):
    - ★ Clean the water valve manholes and inspect for leakages. Any valves must be closed and opened again to make sure the mechanism is in good working condition.
    - ★ Mark the position of the water meter on the kerb of the road or the sidewalk.
    - ★ Test the waterline by closing off all taps and checking the water meter, The cause of any unexplained water loss should be sought immediately. This exercise should be undertaken at least every month.
  - Sewer:
    - ★ All reported sewer line blockages and reasons for the blockages, if known, must be recorded on the database by the management. Should tree roots cause blockages or if blockages occur regularly in the same area, the management must immediately investigate the problem. The management must appoint a competent person to inspect the line and to rectify the problem as soon as possible.
    - ★ Inspection manholes (if installed) should be opened and the flow of water must be confirmed in the sewer line.
    - ★ The sewer-line may require inspection by a camera at biennial intervals, particularly if regular problems are associated with these services.
  - Stormwater (Yearly inspections):
    - ★ Clear all stormwater outlets on boundary walls (if applicable) of sediment, grass and other waste.
    - ★ Visually inspect all stormwater channels and manholes.
    - ★ Grid inlets should be kept free of debris.
  - Common areas (open land and parking areas):
    - ★ The “open” ground must be inspected as part of a routine maintenance/ monitoring. Results of inspection must be recorded whether problems are identified.

- ★ Excessive ponding of surface water must be reported particularly against boundary walls. Where ponding occurs, the situation should be remedied. Al these actions need to be recorded to ensure a proper audit trail if any instability should occur.
- ★ Any signs of cracking either in structures or in the earth are indicative of some movement. These cracks are often the precursor to more serious instability. The cause of cracking should be sought without delay. The management must be notified.
- ★ Areas of unnaturally vibrant growth may be indicative of excessive moisture in the soil from leaking, buried wet services.

➢ Occurrences and incidences:
The following incidences and occurrences must be recorded and put on the database:

- ★ Sewer blockages.
- ★ Subsidences.
- ★ Sinkholes.
- ★ Leakages (water, sewer and stormwater systems)
- ★ Flooding (after heavy rains) and ponding.
- ★ Damage to structures.

➢ The Emergency Reaction Plan should be implemented to form part of an education plan to all tenants and employees. This plan should be implemented in any emergency (i.e. sinkholes; subsidences etc.). Emergency contact numbers should also be included in this emergency plan.
➢ If any incident or emergency took place the rehabilitation plan should be used and to remedy and rehabilite any sinkhole, subsidence or damage caused by any service under the ownership.
➢ The Dolomite Risk Management Plan must be reviewed once every five years to ensure that it still confirm to the relevant standards and requirements. Notes should be made of any weaknesses in the program as well as any necessary additions should be added should it become evident of the five years.

- Geohydrological:
  - ➢ The Groundwater Monitoring and Management Framework alongside the Dolomite Risk Management Plan as part of the EMPr should be implemented.
  - ➢ No boreholes or drilling for boreholes should be allowed and should be strictly forbidden due to the sensitive nature of the underlying karst aquifer and the potential risk of dewatering and sinkhole development.
  - ➢ Groundwater monitoring should be done prior to the commencement of the construction phase.
  - ➢ Monitoring of groundwater should be done with 6 months intervals.
- Traffic Impact Assessment: All recommendations of the Traffic Impact Assessment should be adhered to.
- Recommendations by Department of Water and Sanitation:
  - ➢ The developer should ensure when a new filling station is set up; and the tanks and underground system are being installed; that a clay layer and concrete slab is placed

underneath the equipment that are installed underground. The sequence from the bottom for the above-mentioned is in situ rock – clay layer – concrete slab – sand – storage tank.

- The area used for the storage tanks must be bunted to contain spills at the site; the bund wall must be 110% of the capacity of the tank to be installed.
- Groundwater monitoring should commence before any development in order to become familiar with the groundwater situation. The groundwater monitoring will aid operators to determine their liability with regard to pollution claims that might be received from the public and or government departments.
- Groundwater monitoring should be performed at 6 monthly intervals and analyzed for the wide spectrum macro elements; including hydrocarbons. The developer can contact DWS: Free State Region for advice regarding the number and positions of the monitoring boreholes; as it is site specific.
- 8. The applicant must ensure the storwater run-off has to be directed away from the site to ensure separation of clean and dirty water.
- 9. The plant should be sited; designed and managed so that the quality of the surface and groundwater in the vicinity are not degraded by run-off; leaching or seepage from the site or waste utilization areas.
- Zero discharge of contaminated surface water.
- Monitoring must take place on a continuous basis to ensure the above.

15 WAY FORWARD

All the available information as well as sensitivities on site, recommendation and mitigation measures from all the specialists were considered in order to be in a position to assess the proposed development. After taking all the mentioned factors into consideration and weighing the impacts up with the mitigation measures it seemed that most of the impacts will be medium to high but after the mitigation measures it will be medium and low. It can therefore be said that the impacts can be mitigated successfully to acceptable levels. We therefore recommend that the Proposed Layout for the proposed truck stop and filling station be allowed to continue and that an Environmental Authorization be issued for a period of 10 years for this proposed development.