

## DRAFT BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2014, as amended promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) to:

**KWAZULU-NATAL DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS (EDTEA)**

### PROJECT TITLE

Proposed construction of Bra Cass Service Station (Osizweni) and associated infrastructure, food outlet and 2 x shops on Portion 8 of Farm Johnstown No. 8799 at Osizweni, Newcastle Local Municipality, KwaZulu – Natal.

#### (1) (A) (i) DETAILS OF THE EAP WHO PREPARED THE REPORT:

Mondli Consulting Services has been appointed by Bra Cass Service Station (Pty) Ltd to undertake the Basic Assessment process for the construction of Bra Cass Service Station (Osizweni) including associated structures and infrastructure with a food outlet, and small shops at Osizweni, Johnstown area, Newcastle, KwaZulu – Natal.

#### Details of the EAP:

Business name of EAP:	<b>Mondli Consulting Services</b>		
Physical address:	<b>6 Joseph Avenue, New Era House, Suite 9, Durban North</b>		
Postal address:	<b>P O Box 22536, Glenashley</b>		
Postal code:	<b>4022</b>	Cell:	<b>0826799841</b>
Telephone:	<b>0826799841</b>	Fax:	<b>(031) 5725647</b>
E-mail:	<a href="mailto:mondlib@webmail.co.za">mondlib@webmail.co.za</a>		
	<a href="mailto:mondlibee@gmail.com">mondlibee@gmail.com</a>		

#### (ii) The expertise of the EAP (including curriculum vitae IS ATTACHED)

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
<b>BM Mthembu</b>	<b>Diploma in Nature Conservation Masters Degree (Environmental Studies Dissertation, Geography) Bachelor of Laws (LLB)</b>	<b>EAPASA registered EAP: No. 2018/168 in accordance with the prescribed criteria of Regulation 15(1) of section 24 H Registration Authority</b>	<b>Has been involved in environmental and conservation field for over 20 yrs. Conducted EIAs for over 16 years including Strategic Env. Assessment.</b>

		<b>Regulations</b> Society of South African Geographers (Membership No. 28/09), confirmed to comply with the requirements set by South African Council for Natural Scientific Professions.	Has been involved in the review and commenting on development projects impacting on the environment.
SI Thwala	National Diploma in Analytical Chemistry & Bachelor of Science degree majoring in Geography and Computer Science. He has done many courses in environmental management.	None	3 years' experience in environmental monitoring, and inspection of environmental projects. Assisting in environmental assessment. Training in environmental management.

**(B) THE LOCATION OF THE ACTIVITY**

- (i) The project is located within ward 1 of Newcastle Local Municipality. *The 21-digit Surveyor General code of each cadastral land parcel*

N	O	H	T	0	0	0	0	0	0	0	0	8	7	9	9	0	0	0	0	0

- (ii) *The physical address and farm name*

Property Number	Property Description	Size	Development type
1	Portion 8 of the Farm Johnstown No. 8779	The whole of Portion 8 of Farm Johnstown No. 8799 is 18, 7522 hectares as per the Title Deed T 24722/1990, and is located on both sides of the Main Road MR 483. The site has several portions and the remainder of Portion 8. These comprise of Portion 5	Commercial (Fuel Service Station, food outlet and small shops).

		(of 8) leased by the ZCC Church = 1,6388 part of lease A; <b>Lease A of Portion 8 leased by Mr Cassim Patel on behalf of Bra Cass Service Station – which is the subject property for the current application = 1, 0031 hectares, rounded of to 1 HA.</b>	

- (iii) Where the required information in terms of (i) and (ii) is not available, the co-ordinates of the boundary of the property or properties

Alternatives	Latitude (S)	Longitude (E)
Preferred site	27° 46' 45.95"S	30° 06' 31.50"E
Alternative site 1	None	None

**(C) A PLAN WHICH LOCATES THE PROPOSED ACTIVITY OR ACTIVITIES APPLIED FOR AS WELL AS ASSOCIATED STRUCTURES AND INFRASTRUCTURE AT AN APPROPRIATE SCALE.**

See the attached site map on the proposed site locating Bra Cass Service Station, and locality map – attached as Appendix A (i)(ii) and (iii)

- (i) A linear activity, a description and co-ordinates of the corridor in which the proposed activity or activities is to be undertaken

The proposed project is not a linear activity.

**In the case of linear activities: N/A**

Alternatives	Latitude (S)	Longitude (E)
Preferred site	None	None
<b>Alternative site 1</b>	<b>None</b>	<b>None</b>
Starting point of the activity		
Middle point of the activity		
End point of the activity		
<b>Alternative site 2</b>	<b>None</b>	<b>None</b>
Starting point of the activity		
Middle point of the activity		
End point of the activity		

- (ii) On land where the property has not been defined, the co-ordinates within which the activity is to be undertaken

The proposed activity is not on land where the property has not been defined.

**(D) A DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY, INCLUDING –**

The project entails the construction of Bra Cass Service Station (Osizweni) including associated structures and infrastructure comprising fuel storage tanks [2 x 43 000 litres ULP] and 1 x 43 000 litres diesel all underground, pumps, canopy and building on site comprising the office, convenience shop, food outlet, kitchen, staffroom and toilets.

The site will also house small service shops. Gas will be stored in bottles of 9kg (30), 14 kg (10), 19kg (20) and 48kg (10), totaling 1270kg at any given time.

The Service Station building with associated structures and infrastructure will be a double storey building.

**(i) All listed and specified activities triggered and being applied for**

In terms of the Environmental Impact Assessment (EIA) Regulations 2014, as amended, promulgated in terms of the National Environmental Management Act, 1998 (NEMA), certain listed activities are specified for which either a Basic Assessment (GNR 327 and 324) or a full Scoping and Environmental Impact Assessment (GNR 325) is a requirement.

In this regard the following listed activity in Government Notice R 327 which is Listing Notice 1 is applicable, which require only a Basic Assessment process.

Indicate the number and date of the relevant notice:	Activity No(s) (in terms of the relevant notice):	Describe each listed activity as per the project description (and not as per wording of the relevant Government Notice) <sup>1</sup> :
GNR No. 327 (Listing Notice 1) of 7 April 2017	Activity No. 14 – The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not	<p>In this instance, it is 129 000 litres of fuel that will be stored on site for commercial purposes as part of the proposed Bra Cass Service Station.</p> <p>The fuel storage tanks will comprise [2 x 43 000 litres unleaded (ULP)], 1 x 43 000 litres Diesel, and all the tanks will be underground.</p> <p>Gas will be stored in bottles of 9kg (30), 14 kg (10), 19kg (20) and 48kg (10), totaling 1270kg at any given time.</p>

	exceeding 500 cubic metres;	

(ii) **A description of the activities to be undertaken including associated structures and infrastructure**

Background and proposed development

The whole of Portion 8 of Farm Johnstown No. 8799 is 18, 7522 hectares as per the Title Deed T 24722/1990, and is located on both sides of the Main Road MR 483. The site has several portions and the remainder of Portion 8. These comprise of Portion 5 (of 8) leased by the ZCC Church = 1,6388 part of lease A; **Lease A of Portion 8 leased by Bra Cass Service Station (Pty) Ltd – which is the subject property for the current application = 1, 0031 hectares, rounded of to 1 HA**; Lease B of Portion 8 = 11,621 HAs and the Remainder of Portion 8 (household of the owner) and sections adjacent to MR 483 being the balance.

The area of focus for the purposes of this development is 1,0031 hectares with existing buildings (5 x shops), food outlet and the proposed service station and associated structures and buildings.

From N11, to Madadeni Township (Madadeni road) through to Osizweni until the robots at Theku Mall (Osizweni), joining main road MR 483. From the Theku Mall robots to the site travelling on MR 483 is exactly 2 kms, with site located on the left-hand side Utrecht bound, at Johnstown.

The site is already zoned “Fuel Service Station” by Newcastle Local Municipality. The Service Station building with associated structures and infrastructure will be a double storey building.

The site is flat and has no vegetation. The soil is not showing any signs of erosion. The proposed site is highly transformed in the sense that it has existing buildings on it.

The project entails the construction of Bra Cass Service Station (Osizweni) including associated structures and infrastructure comprising fuel storage tanks [2 x 43 000 litres ULP] and 1 x 43 000 litres diesel all underground, pumps, canopy and building on site comprising the office, convenience shop, food outlet, kitchen, staffroom and toilets.

Gas will be stored in bottles of 9kg (30), 14 kg (10), 19kg (20) and 48kg (10), totaling 1270kg at any given time.

Project Overview

The completed project will have 5 x small existing shops, the new service station and food outlets on Portion 8 of Farm Johnstown No. 8799 on this site situated along main road MR 483.

During the pre – application meeting held on 26 February 2020, there was a question of the status of the building that was already on site in relation to the authorization process. In this regard the EAP furnished the google images of the site from 2010 – 2019 showing that the site was already disturbed and clearly had activities taking place on site. It was also established that the soil had been disturbed during the preceding 10 years. This was further collaborated by the fact that the applicant lodged an enquiry for 69 000 litres on site in February 2018, and the Department officials visited the

site as reported by the applicant, and the official response from the Department showed that nothing was triggered on site. It was therefore agreed that the building already on site had not triggered any listed activity. The subject of the environmental authorization was going to be the service station and its associated structures, as well as the food outlet.

### Project objectives

The objective is to have a service node on Portion 8 of Farm Johnstown No. 8799 that will benefit the local people, and motorists travelling along main road MR 483 to Utrecht. The Facility will provide fuel to motorists utilising main road MR 483, and serve as a facility where motorists can rest and refresh, which will contribute in road safety. The project also intends providing sustainable jobs to the local people.

### Services on site

The following are in the main captured under **Stormwater Plan, Water Supply and Drainage report** (see **Appendix E (3)(a)** below).

### **Sewer reticulation**

Johnstown area has no sewer line, and no existing water borne sewer system network. The area in general is serviced through septic tanks. The Facility will be served with on-site sanitation. Infinite Designs Consultants – LWA (Pty) Ltd has been engaged to develop a sewer layout and basic designs for the proposed site. This is critical given the fact that the development will produce sewerage from ablution facilities, and grey water from hand basins washing facilities and the food outlet.

The sewerage facilities will be located as per the details provided in the **attached layout plan showing both septic tanks positions and stormwater – Appendix E (3)(b)**. The designs are prepared in line with the requirements of the Municipality, and the Department of Water and Sanitation and the “*Guidelines for Human Settlement Planning and Designs*”

### **Water**

There is portable water in the area, and on site. Rainwater harvesting will also be encouraged on site, and this water can be used for cleaning and flushing of toilets.

### **Stormwater Infrastructure – the stormwater plan is attached as Appendix E (3)(b) as highlighted above.**

The site has no formal stormwater management system. The objective of a storm water management plan is to manage the storm water resources of the collective watersheds to:

- Prevent flood damage or concentration of run-off;
- Divert storm water and surface run-off from buildings, roads and parking areas into rainwater harvesting tanks and area parallel to the road and the developments of the site.
- Preserve the natural and beneficial functions of the neighbouring land uses;
- Preserve and enhance storm water quality; and
- Attenuate the difference between pre and post development flows.

The proposed storm water management system has been designed to be self-regulating with no external control. It will aim to collect run-off into rainwater harvesting tanks and areas running parallel to the road, and manage the increase in flow between the pre and post development stages.

### **Roads**

The proposed site can be accessed via main road MR 483, with two access points off the same road but at different points.

There will be no internal roads, as the traffic from MR 483 will enter straight to the paved site constructed to suit the anticipated traffic flow through the service station, with the parking areas provided within the property.

### ***Electricity***

There is electricity infrastructure on site managed and supplied by Eskom. The project will have to do the necessary extension connection through ESKOM.

ESKOM always insist that no structure be placed within 12 metres from the centre line of any of their powerline or either side without the written confirmation of ESKOM.

### ***Refuse***

An enclosed collection point will be provided within the Service Station to collect and store refuse until it can be removed by a contracted service provider to a landfill site.

It is anticipated that the project will generate the following types of waste:

#### *Construction phase*

General waste – the general waste likely to be generated during the project construction include litter from workers on site like plastics and papers. The suppliers and construction in general are likely to generate cans, papers and empty cement bags and other containers.

Hazardous – hazardous waste is defined as waste that poses substantial or potential threat to public health and the environment. This includes waste that tends to ignite, reactive, corrosive and toxic. The anticipated waste include metal, oil spills, concrete remnants, asphalt, chemical waste during construction and paint containers. Hazardous chemical substances must be inventoried and stored in accordance with the requirements of the safety data sheet, the EMPr and the Norms and Standards for the storage of waste.

#### *Operational phase*

General waste – paper and cans, cardboards, plastics and food items from the restaurant.

Hazardous waste – It is anticipated that the operational phase will generate chemical waste, oil, oil cans and petro chemicals during the operational phase. This type of waste has to be landfilled in the landfill that is authorized to take such waste. As highlighted above all type of chemicals must be stored in line with the legislated standards. Any hazardous waste will be collected by a contracted specialist service provider.

Refuse will be stored at the designated “storage area” within the premises, and be collected once a week by either the Municipality or private registered service provider for disposal at the landfill site at Newcastle. It is anticipated that the stored waste before collection will be below the threshold of 100m<sup>3</sup>, too little to warrant a waste license in terms of GN 718: Category A; B & C. The project will promote the recycling of material like paper, glass, tins and plastic bottles and do separation at source. The recycling is also anticipated to be below 10 tons per month.

#### *Construction and phases*

The project entails only one phase, which will be a service station together with a convenience shop and a food outlet. It is anticipated that the project will take about 9 months to complete, if the environmental authorisation is granted. However, like any project of this nature there could be external variables and influences which cannot be controlled by the applicant. The applicant will request the maximum timeframe allowed for the validity of a decision.

The construction phase will follow the Environmental Management Programme and recommendations of Specialists studies.

#### *Filling station and underground tanks*

*The filling station complex will comprise the following: canopy (375.65m<sup>2</sup>), convenience shop (291.01m<sup>2</sup>) and 2 x shops of 77.29m<sup>2</sup>) and 84.47m<sup>2</sup>) respectively.*

As highlighted above, all tanks will be composite type tanks to be stored underground. This area will be expanded under the EMPr, but it has to be stated that the SAB specifications and guidelines will be complied with, which will include:

- SABS 089 – 3 1999 – the installation of underground storage tanks, pumps / dispensers and pipes.
- SABS – 0140 – 2 – Identification of colour markings (identification of hazards and equipment).
- SABS 62-1 & 62 -2 – steel pipes fittings.
- SABS 1123 – steel pipes flanges
- SABS 12000 – standardised specifications for construction
- SABS 1535 – polyester coated steel tanks for the underground storage for hydrocarbons and oxygenated solvents.

Accordingly, the underground storage tanks will comply with relevant SANS / SABS codes of Practice which include: SANS 10400 TT 53, SANS 10131, SANS 10108, SANS 11535 and SANS 10089 Part 2 & 3.

The underground storage tanks will be accordingly fitted with an overfill protection device. The tanks will be designed as to reduce risk of possible soil and groundwater contamination. As an extra precautionary measure, the underground storage tanks will be dipped daily and reconciled against volumes to establish any possible loss attributed to leakage. The conditions of the tanks, pipes and monitoring wells will be inspected on regular basis. The underground tanks and products will be pressure tested prior to the actual commissioning. The tanks will be underground as opposed to above the ground, in order to eliminate the risk of fire.

The following must be emphasized with regard to the stormwater and fuel / oil:

- Storm water, petrol, diesel and other polluted run-off must be directed to the containment sump of appropriate design.
- Storm water leaving the premises shall not be polluted by any substance whether such a substance is a solid, liquid, gas vapour or any combination of these.
- There must be no mixing of contaminated and uncontaminated water.
- Clean storm water must be separated from contaminated storm water.

#### *Food outlet*



The food outlet will cover an area of 79.16 m<sup>2</sup>. The anchor franchise has not been decided as yet, with discussions ongoing. The customers will be able to order food at the counter or be provided with an option of sitting down while enjoying their meals.

The total area of the ground floor is 627.79m<sup>2</sup> and first floor is 186.92m<sup>2</sup>).

The Engineer who compiled the sewer, drainage and stormwater plans concluded that development can proceed, and safe as designed and as per the provided calculations:

- Complying with the recommendations of the Geotechnical Assessment done by GeoPro (Pty) Ltd on site.
- Application to Eskom for an electrical connection.
- Implementation of a Storm Water Management Plan and Sewer designs.

#### **(E) A DESCRIPTION OF THE POLICY AND LEGISLATIVE CONTEXT WITHIN WHICH THE DEVELOPMENT IS PROPOSED INCLUDING –**

*(i) An identification of all legislation, polices, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report*

<b>Legislation</b>	<b>Authority</b>	<b>Year</b>
National Environmental Management Act	Department of Economic Development, Tourism and Environmental Affairs (EDTEA) / Department of Environment, Forestry and Fisheries (DEFF)	1998
EIA Regulations, 2014	EDTEA / DEFF	2014
Guideline:5 Assessment of Alternatives and Impacts in support of EIA Regulations	EDTEA / DEFF	2006
Guideline on Need and Desirability, Department of Environmental Affairs	EDTEA / DEFF	2017
Petroleum Products Act, 1977 (Act 120 of 1977) as amended. – Petroleum Products site and retail	Department of Mineral Resources and Energy	1977 and 2006 respectively

license Regulations 2006		
Pollution Prevention Act (APA) (Act No. 45 of 1965)	EDTEA / DEFF	1965
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	EDTEA / DEFF	2004
The National Water Act	Department of Human Settlement, Water and Sanitation	1998
KZN Provincial Roads Act, No. 4 of 2001	KZN Department of Transport	2001
National Environmental Management: Waste Act	EDTEA / DEFF	2008
National Environmental Management: Biodiversity Act	DEDTEA / DEFF	2004
KwaZulu-Natal Amafa and Research Institute Act, Act No. 5	KwaZulu – Natal Amafa and Research Institute	2018
National Heritage Resources Act National Heritage Council Act	Heritage Council Heritage Council	1999 1999
South African Constitution	RSA	1996
Promotion of Administrative Justice Act	Department of Justice	2000
Occupational Health and Safety Act, 85 of 1993	Department of Employment and Labour	1993
Noise Control Regulations (Regulations 154, 10 January 1992)	EDTEA / DEFF	1992
SANS 10400 amendments, in terms of the National Building	Newcastle Local Municipality / Department of Employment and	1977

Regulations and Building Standards Act, No. 103 of 1977, as amended	Labour	
National Development Plan	RSA Government Departments, Municipalities and Public Entities	2011
Newcastle Local Municipality Integrated Development Plan (IDP) 2013/2014	Newcastle Local Municipality	2013
Amajuba District Municipality IDP	Amajuba District Municipality	2017 / 2018

(iii) *How the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments*

<b>Legislation, polices, plans, guidelines, spatial tools, municipal development planning frameworks and other instruments</b>	<b>Compliance and applicability</b>
National Environmental Management Act	Promulgation is as per this Act
EIA Regulations, 2014	The whole process has to comply with these Regulations. This is in line with the EIA Regulations as promulgated in terms of the National Environmental Management Act, 1998 (NEMA).  In this regard activity No. 14, of Listing 1 is applicable. The activity relates to 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 but not exceeding 500 cubic meters. 129 000 litres of fuel and 1270kg of gas at any given time will be stored on site.
Guideline:5 Assessment of Alternatives and Impacts in support of EIA Regulations	These Guidelines are applicable in terms of the exploration of alternatives.
Guideline on Need and Desirability, Department of Environmental Affairs	In terms of these guidelines the need and desirability of the project has to cover certain specifics like training, safety, service delivery, benefits to the local people and the alignment of planning related issues to the project.
Petroleum Products Act, 1977 (Act 120 of 1977) as amended. – Petroleum Products site and retail license Regulations 2006	This relates to the control of petroleum products, site and retail licenses in this regard.
Pollution Prevention Act (APA) (Act No. 45 of 1965)	This may be applicable in case of dust on site.

National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	This may be applicable in case of dust on site.
National Environmental Management: Protected Areas Act	This is applicable from the conservation value perspective of the area.
The National Water Act	The activities that may affect water resources on site e.g. active boreholes and groundwater resources.
KZN Provincial Roads Act, No. 4 of 2001	This is with particular reference to the acceptability of ingress / egress, traffic volumes and general traffic safety conditions around the project site.
KwaZulu-Natal Amafa and Research Institute Act	The legislation relates to heritage objects in case there are heritage resources on the site in question.
South African Constitution	Section 24 of the South African Constitution impress upon everyone having the right to an environment that is not detrimental to health.
Noise Control Regulations (Regulations 154, 10 January 1992)	This relates to any noise that may need to be controlled during construction and operational phases of the project.
National Environmental Management: Waste Act	All waste related issues are governed by this legislation e.g. appropriate disposal of solid waste during construction and operational phases, as well as storage of waste on site.
Occupational Health and Safety Act	Safety and Health issues on site, especially during construction and beyond.
SANS 10400 amendments, in terms of the National Building Regulations and Building Standards Act, No. 103 of 1977	This has to accompany the building plans submitted to the Local municipality.
National Development Plan	This relates to issues of job creation, economic activities, rural employment and inclusive rural development, environment challenges and the need for sustainable development. The plan speaks about creating 11 million net new jobs over the period and reducing the rate of unemployment to about 6% by 2030.
Newcastle Local Municipality Integrated Development Plan (IDP) 2013/2014.	The project is in line with the ethos of the Newcastle Local Municipality's IDP document.
Amajuba District Municipality IDP	The project is in line with the stated vision of Amajuba District Municipality.

**(F) A MOTIVATION FOR THE NEED AND DESIRABILITY FOR THE PROPOSED DEVELOPMENT INCLUDING THE NEED AND DESIRABILITY OF THE ACTIVITY IN THE CONTEXT OF THE PREFERRED LOCATION**

The proposed Bra Cass Service Station, small shops and food outlet development will bring a positive contribution to the lives of Osizweni, Johnstown community, and stimulate the local economy. The identified site is situated along the main road MR 483 to Utrecht, and will be of benefit to motorists travelling along this road. This project is likely to serve as a catalyst for the development of the node.

The proposed Facility will serve as a refueling, rest and eating place for motorists travelling along the main road MR 483 to Utrecht and beyond. The proposed Facility will provide a convenient service to both the people of Osizweni, Johnstown and the surrounding rural areas and passing motorists travelling along the main road. The Facility will also store and sell gas to the local people, which is a very important energy alternative to electricity in most previously disadvantaged areas.

The population statistics in the study area indicates lower illiteracy and numeracy levels. Therefore, the proposed Bra Cass Service Station, small shops and food outlet development will by its nature be creating non-technical jobs so that even those with lower educational levels can be absorbed into the economy. Such jobs include fuel attendants, waitress, cashiers and the like, which may need on job training. The Facility will also provide hope to the young locals aspiring for managerial positions in future as they can grow on the job or those who are ready can immediately fill those positions.

Given the positioning, location and surrounding land use, the proposed Service station is an attractive location with a spacious layout to achieve adequate site circulation. It will act as a catalyst for future development and will be designed to modern standards, making it very attractive.

The development of the Bra Cass Service Station and food outlet will play an import role in addressing some of the development challenges facing the KwaZulu – Natal Province through the creation of jobs. There are seven Amajuba District Strategic goals, and these goals are aligned with the Provincial Growth and Development Plan and are aimed towards the attainment of the 2030 development vision. The goals and objectives of the Amajuba District Growth and Development Plan are relevant and applicable to the Newcastle Local Municipality. This project will go a long way towards achieving those stated strategic goals.

It is further anticipated that the project will provide jobs that are sustainable for the local people of Osizweni, Johnstown.

The proposed development will unfold in line with the following project phases:

***i. Preconstruction phase and planning***

This phase offer opportunities that are provided by the project to the local professional service providers when ever the skills are available. It does also offer limited opportunities for manual work e.g. the locals were engaged during the digging of trial pits.

***ii. Construction phase***

This phase is highly technical in terms of engineers, artisans and the like, but also make provision for manual worker and opportunities for the local suppliers and small sub-contractors.

***iii. Operational phase***

Provision of sustainable and permanent jobs to the locals through the retail sector. The developer has indicated his desire to employ and prioritise local people, and this will have an advantage of shorter

travelling distances for the locals, thus saving in travelling costs. In fact, the developer is already employing several local people in various capacities with regard to this development.

Looking at the guideline on need and desirability publication, compiled as part of the EIA Guideline & Information Document Series, one has found it very helpful in further assessing this development. The guideline tends to focus on planning tools like the Integrated Development Plan (IDP), Spatial Development Framework (SDF) and Environmental Management Framework (EMF). The said guideline provides a list of 14 aspects, which must be considered. The points below indicate how different aspects have been addressed for the proposed development.

1. Is the land use (*associated with the activity being applied for*) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (*i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP*).

**Response: The project falls within Newcastle Local Municipality, which falls within the Amajuba District Municipality. Amajuba District Municipality IDP (2018 – 2019)'s long term vision among other things talks about safe and healthy environment, integrated service delivery and local economic development.**

**The proposed project will go a long way in meeting some of these aspirations, in particular the local economic development aspects. Moreover, the site is already zoned by Newcastle Local Municipality as Fuel Service Station, confirming that this location is ideal for this type of development.**

2. *Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?*

**Response: As highlighted above, the identified site is already zoned by Newcastle Local Municipality as Fuel Service Station.**

3. *Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).*

**Response: This project is likely to serve as a catalyst for the development of the node. At a national scale, the development will contribute to the safety of motorists travelling along MR 483 as a refreshing Facility. At a local level the project is likely to provide sustainable jobs. During the public meeting held on 25 March 2020 the community unanimously supported the project as captured in the attached minutes.**

4. *Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?*

**Response: Portable water is available in the area, as well as on site. Electricity is also available in the area and on site, however for this project the developer will lodge a formal application to ESKOM for connection, and Eskom will also advise with regard to capacity. The area has no sewer infrastructure, and the project will make use of septic tanks. The attached sewer plan is part of ensuring the provision of such infrastructure. The project is accessible from the main road MR 483 to Utrecht, with two access points.**

5. *Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?*

**Response: The project will not be affected much by the municipal infrastructure as most of the engineering services are already available. The applicant will also pay for the sewer infrastructure envisaged on site as evidenced by the attached sewer layout plan. The applicant is also prepared to make a financial contribution in any other aspect that may be required e.g. electricity.**

6. *Is this project part of a national programme to address an issue of national concern or importance?*

**Response: Yes, because the project will contribute in job creation programme of government. More so, the national Development Plan (NDP).**

7. *Is the development the best practicable environmental option for this land/site?*

**Response: Yes, because of its current zoning. The site has no natural assets like indigenous trees, water resources, fauna and so forth. The site presents no serious environmental challenges based on our current assessment, and that of specialists like Geotechnical study.**

8. *Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?*

**Response: No, as it is already zoned Fuel Service Station by the Newcastle Local Municipality.**

9. *Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?*

**Response: No. The proposed mitigation measures are considered adequate.**

10. *Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context).*

**Response: The proposed facility is located in an area that is already zoned Fuel Station.**

11. *How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural / natural environment)?*

**Response: The development will not impact on sensitive natural areas as there are none based on the EAP's assessment. The Heritage specialist has confirmed that the site is highly disturbed and does not warrant any further heritage assessment.**

12. *How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)?*

**Response: The proposed development is not an emission producing activity per se, except the fumes from fuel and air pollution from vehicle exhausts. In terms of the visual character and sense of place the site is highly disturbed given the fact that it has been used for various activities. The site is surrounded by a mixed settlement with structures that are observed when travelling along the**

main road MR 483, therefore light is not something that is completely foreign in this landscape and its surroundings. However, it is a fact that the facility will be noticeable on the landscape, especially at night.

13. Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?

**Response: No.**

14. Will the proposed land use result in unacceptable cumulative impacts?

**Response: No.**

### **(G) A MOTIVATION FOR THE PREFERRED SITE, ACTIVITY AND TECHNOLOGY ALTERNATIVE**

As per GN. R 326, Appendix 1(2)(b), alternatives for the proposed development are to be identified and considered, and this is in line with the definition under Chapter 1 of the EIA Regulations, interpreting alternatives as “in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the –

- a. Property on which or location where the activity is proposed to be undertaken;
- b. Type of activity to be undertaken;
- c. Design or layout of the activity
- d. Technology to be in the activity;
- e. Operational aspects of the activity

This includes the option of not implementing the activity. This approach compels the developers and assessors to consider other potential land uses and possible future land uses for the site under assessment.

In essence this section focusses on the motivation for the preferred site, looking at the topics covered below:

#### Property on which the activity is undertaken

The property has been used for various activities in the past, and currently has an existing building comprising 5 shops. The applicant is now adding the service station and food outlet with associated buildings in line with demand for fuel. The service station and storage of gas in particular have triggered activity 14, of GNR. 327 of 2014 (Listing Notice 1) as amended.

The site is 10 000 m<sup>2</sup> in total, and already zoned Fuel Service Station. The site is ideally located along the main road MR 483 to Utrecht, and will not result in the removal of local people. The site already meets some of the requirements for a Service Station like visibility, accessibility and size. The site is already leased by the applicant from the land owner for the purposes of this project. BP South Africa has also been satisfied with the traffic count conducted for the site.

#### Type of activity undertaken

The Service Station by its very nature require a site that is highly visible from the passing motorists. The activity is highly regulated in terms of the dangerous goods to be stored on site as outlined on the Environmental Management Programme. This calls for high level safety mechanisms from both the public safety and occupational health and safety perspective with regard to all phases of the project.



### Design and layout of the activity

In this instance, there was no need for a detailed identification and ranking of alternative candidate site and the ranking thereof. Where alternatives are required, they become important in the sense that alternatives are a basic integrated environmental management (IEM) principle. The project did not use any specific matrix to compare alternative sites as this was the only site forming part of the property already leased by the applicant. The issue was only about the exact location within the site which has to be closer to the road and entrance. The site has been subjected to various technical assessments including heritage impact assessment, socio-economic study, site drainage and stormwater management, geology of the site and so forth. These assessments did not reveal any fatal flaw with regard to the overall site.

The layout has been designed having taken all the above factors into account. Moreover, the site is not in conflict with the current municipal planning tools like the IDP and SDF.

### Technology to be used by the activity

There is no specific technology that will be used for the project, except the designs that will be in line with modern standard Service Station.

The underground storage of tanks is highly controlled within the industry in South Africa through South African Bureau of Standards (SABS) Specifications and Codes, Guidelines and various South African National Standards (SANS). Therefore, there will be heavy reliance on SANS codes of practice as specified for the underground storage tanks and associated fuel handling infrastructure.

Moreover, BP South Africa is an experienced Petroleum Company that has years of experience in this field, with extensive knowledge of relevant and current technology.

### No - go option

The no-go option is defined as an option of not undertaking the proposed activity and its associated alternatives. In this instance this will mean retaining the entire one (1) hectare site for the existing 5 smaller shops, with the rest of the land remaining undeveloped. This will amount to underutilization of the land.

The no go option will serve no purpose in this instance because the site is already in use in terms of the existing shops. Furthermore, the site is already zoned Fuel Service Station.

The proposed activity and facility will afford the local people an opportunity to be employed and thereby contributing in alleviating poverty. If this option is not pursued the unemployed are likely to lose out in terms of potential job opportunities that are likely to be created by this development. This is particular true for the locals who are unskilled, especially during the construction phase. The local small businesses are also likely to benefit during the project construction phase. The facility will provide permanent jobs for those who will be employed when the facility is operational.

There will be a loss of local economic empowerment and other opportunities like subcontracting, supplying material and trading during construction. There could be loss of revenue generation by the Municipality in future through rates, which in turn assist in service delivery. The no-go option will mean a missed opportunity for a catalyst to develop the node.

The no-go option from another perspective will mean no development on this site and landscape. There will be not a slightest chance for soil contamination, and ground water pollution. The no-go option will mean no

“light pollution” at night on this site. It will also mean there will be no fumes from fuels and air pollution from the vehicle exhausts. The no go option will also mean no risk of explosion on the property which may affect the surrounding areas, as well as crime, as criminals may target the Service Station and this unintentionally affect the workers and surrounding area.

#### Alternative site

There is no alternative site for this proposed development. The developer has leased this site for this specific activity, which is a fuel Service Station, small shops and food outlet, and there is no other site available to the developer within the immediate surrounding. The site is already zoned Fuel Station by the local municipality.

It would not make sense to leave the site that is already zoned for this activity by the local municipality to go and look for another one, especially if there are no fatal environmental flaws. The chosen site has no watercourses nor wetlands in the vicinity, with zero chances of ground water contamination.

The site seems ideal for the following reasons:

- It is easily accessible along the main road MR 483, and provide an ideal facility for resting and refreshing for the motorists.
- The site is not in conflict with the development plans of the local Municipality, given the fact that it is already zoned Fuel Service Station.
- The site has enough space for the buildings and parking.
- The site is attractive from the business perspective with regard to accessibility and visibility.
- The site is located within a well-developed Johnstown settlement, and is likely to provide jobs for the people of Osizweni, Johnstown.
- The assessments conducted on site have not revealed any fatal flaws.

#### Operational aspects of the activity

The activity will contribute in job creation in the area of Johnstown, Osizweni and Newcastle. This will be critical in an area with low level of skills as identified in the socio – economic study. The activity will provide sustainable jobs to the local people. The activity will also meet the fuel needs of both the locals and passing motorists.

### **(H) A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVE WITHIN THE SITE, INCLUDING:**

#### ***(i) (a) Details of all the alternatives considered***

No alternatives have been considered as per the reasons furnished under (G) above.

The whole of Portion 8 of Farm Johnstown No. 8799 is 18, 7522 hectares as per the Title Deed T 24722/1990, and is located on both sides of the Main Road MR 483. The site has several portions and the remainder of Portion 8. These comprise of Portion 5 (of 8) leased by the ZCC Church = 1,6388 part of lease A; **Lease A of Portion 8 leased by Mr Cassim Patel – which is the subject property for the current application = 1, 0031 hectares, rounded of to 1 HA**; Lease B of Portion 8 = 11,621 HAs and the Remainder of Portion 8 (household of the owner) and sections adjacent to MR 483 being the balance.

It is in this context that the exact location with the overall site is chosen. In the context of the I HA area for this project, a portion of it is already having a building with 5 shops. The balance of the site is therefore proposed for the Service Station.

As indicated above the site has been in use for several years, and is now adding the Service Station and associated structures. The advantage of the proposed site is that it is already leased by the applicant, closer to the road and BP South Africa is satisfied with the site and inherent traffic count conducted.

***(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs***

The project has followed the standard public participation process as contemplated under Regulation 41 of the 2014 EIA Regulations, as outlined below.

- Site notice board – notices were displayed on site on a visible location on both site entrances for a continuous period of 30 days. A picture of the notice that was displayed on site as contemplated under Regulation 41 (3) is attached. (see **Appendix B (1)**).
- Public meeting - the stakeholders including the local community were all informed about the project through an invitation by the developer and ward Cllr Molelekoa to the public meeting. The project was explained to the public during the actual public meeting held on 25 March 2020 as per the attached agenda, minutes and attendance register- **Appendix B (3)(i), (ii) and (iii) respectively**.
- The newspaper advert was published in the Eyethu Amajuba dated 26 June 2020.- **Appendix B (6)**.
- Draft Basic Assessment Report (dBAR) circulation / Written Notices – a register of Interested and Affected parties has been compiled.
- Notification letters have been sent to the relevant stakeholders inviting them to comment on the project.

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

Over and above the TABLE below, see also attached TABLE 15 comprising Comments and Responses Report, as well as TABLE 14, which is the Register of interested and affected parties.

Organisation (I & A party)	Issue / concern raised	EAP's response	Incorporation / Non-incorporation and reasons thereof
Ezemvelo KZN Wildlife	Biodiversity issues.  Comments will be attached as <b>Appendix B (7)</b> .	There are no biodiversity issues on site, as it is already disturbed and has been used for various activities in the past.	None.
KwaZulu – Natal Amafa and Research Institute	KwaZulu – Natal Amafa and Research Institute is the custodian for heritage objects.  Umlando Archaeological Surveys and Heritage has been engaged to look at all issues relating to	The draft report and background information has been forwarded to KwaZulu – Natal Amafa and Research Institute for their comments.  In the main, the Heritage report ( <b>attached as</b>	Amafa comments will be incorporated onto the EMPr.

	<p>heritage and palaeological material.</p> <p><b>Comments from KwaZulu – Natal Amafa and Research Institute will be attached as - Appendix B (8).</b></p>	<p><b>Appendix E (4)</b> has indicated that as much as there are archaeological sites in the general area, but there are none in the study area, and on site.</p> <p>Furthermore, no national monuments, battlefields, or historical cemeteries are known to occur in the study area. There is one cemetery predating 1944.</p> <p>Dr Smith who carried a palaeological material investigation found that the area is of very high palaeontological sensitivity. However, the area is so disturbed that any that may have been on site would have been destroyed. He recommended that there was no need to proceed to a desk top PIA investigation.</p>	
Department of Human Settlement, Water and Sanitation (DHWS)	<p>Department of Human Settlement, Water and Sanitation is among other things a custodian of water and sanitation.</p> <p>Comments from DHWS will be attached as <b>Appendix B (9) (ii).</b></p>	The draft BAR and EMPr has been forwarded to DHWS for comments.	All the recommendations of DHWS will be incorporated into the EMPr.
KZN Department of Transport (KZNDOT)	<p>KZNDOT is the custodian of the Provincial roads in KwaZulu – Natal.</p> <p>Attached are comments when the capacity was still 78 000<sup>3</sup> - <b>Appendix B (13)(i).</b></p> <p>Comments relating to this application will be attached as <b>Appendix B</b></p>	<p>DoT had in 2017 issued a letter of no objection to the project.</p> <p>The draft BAR report has been forwarded to KZNDOT for their comments.</p>	The conditions outlined by DoT will be incorporated into the EMPr.

	<b>(13)(ii)</b>		
Department of Mineral Resources and Energy	The Department of Mineral Resources and Energy has already issued both the retail and site licenses.	The retail and site licenses have been issued.	The applicant has to observe all conditions in terms of the retail and site licenses.
Newcastle Local Municipality	The Planning Section of Newcastle Local Municipality has already approved the rezoning of the site, and issued the zoning certificate for the Fuel Service Station.  The rezoning approval and zoning certificate is attached as <b>Appendix B (14)(i)</b> .  Comments relating to this application will be attached as <b>Appendix B (14)(ii)</b> .	The draft BAR and EMPr has been sent to the Municipality for their formal comments on the project.	The recommendations of the Local Municipality will be taken into consideration in terms of the EMPr.
Amajuba District Municipality	The District Municipality is responsible for the provision of bulk services – Comments from the District will be attached as - <b>Appendix B (15)</b> .	The draft BAR and EMPr has been sent to the District Municipality.	EMPr will reflect the recommendations of the District Municipality.
ESKOM	ESKOM is an entity responsible for electricity issues and servitudes on the project site.  Comments will be attached as <b>Appendix B (16)</b> .	The draft BAR and EMPr has been sent to ESKOM for comments.	Eskom conditions will be incorporated onto the EMPr.
Land Claims Commission	The Department is responsible for confirming if the site is not under any land claim.  See comments attached as <b>Appendix B (17)</b> .	It has been confirmed that the site is not under any land claim.	None.
Fuel Retailers Association.	This is an industry association which is an interested stakeholder.  Comments will be attached as <b>Appendix B</b>	The draft report has been forwarded to the Association for comments.	Comments will be taken into consideration with regard to the EMPr.

	<b>(19).</b>		
Department of Economic Development, Tourism and Environmental Affairs (EDTEA).	EDTEA is the Department mandated to authorize environmental applications in the Province of KwaZulu – Natal.  Comments will be attached as <b>Appendix B (20).</b>	The draft BAR and EMPr will be forwarded to EDTEA for comments.	The comments of EDTEA will be incorporated onto the final BAR.

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

***(Preferred site)***

***Geographical and physical attributes***

The site is not showing any signs of erosion, and has no vegetation at all.

***Land Use character***

The site was previously leased to someone who was staying on it. The surrounding land use, is mixed use with a well-developed Johnstown settlement.

The site is located 2 kms from iTheku Mall along the main road MR 483 to Utrecht. There is no watercourse traversing or adjacent to the site nor wetlands and protected area in the vicinity of the site.

***Description of baseline environment***

***Topography***

The site is flat with existing buildings on it.

***Climate***

The general weather of Newcastle is warm and temperate, with cold winters. The average annual rainfall is said to be around 779 mm per annum.

***Description of ecological baseline***

***Vegetation and Fauna***

***Vegetation***

The site has no indigenous vegetation nor any vegetation at all. Indigenous vegetation is defined in LN 1, as vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation, and where the topsoil has not been lawfully disturbed during the preceding 10 years.

*Fauna*

No fauna was observed during the site visit.

***Soil and Geology***

There are no signs of soil erosion, and erodibility observed on site. From the geological perspective, and the Geotechnical report (**attached as Appendix E (2)**), the general area within which the site is located is underlain by Ecca Group Sandstone that belong to the Karoo Supergroup that is estimated to be 180 – 300 million years old. When these rocks decompose, they form residual soils that may be silty. These soils are often blanketed by a considerable thickness of transported soils of colluvial and alluvial origin that consist of silty sands.

The site is considered stable and satisfactory for the proposed development, provided the recommendations provided by the Geotechnical report are followed to the letter.

***Groundwater and Wetlands / Hydrology***

There is no watercourse nor wetlands in the vicinity of the site. The subsurface water conditions of the site are shown in Table 4 of the attached Geotechnical report. No subsurface water seepage was encountered in the trial pits.

***Social attributes***

The area is falling under Newcastle Local Municipality demarcated as ward 12 in terms of municipal boundaries. The site is surrounded by a mixed-use Johnstown settlement.

***Economic attributes***

The proposed project is likely to create economic spin offs for the local people, especially the Johnstown area. The project is likely to make a major economic contribution in this regard, given the fact that it is located along the main road MR 483.

***Heritage & archaeological, historical features and cultural aspects***

Our walk about on site did not reveal any graves nor any visible heritage objects within the proposed project site. Umlando Archaeological Surveys and Heritage Management was requested to assist with regard to the Heritage Impact Assessment of the site. They confirmed in their attached report that there are no heritage objects on this site.

Nonetheless, the relevant documents have been forwarded to KwaZulu – Natal Amafa and Research Institute for their formal comments.

***Site photograph below***



Figure 1 - Site photograph, 26 February 2020

- (v) **The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts –**

*(aa) can be reversed*

*(bb) may cause irreplaceable loss of resources; and*

*(cc) can be avoided, managed or mitigated*

As highlighted this project has not considered any alternatives as per the reasons furnished above, as a result it will only consider the potential impacts for the preferred site.

#### **Impacts identified for the preferred site**

- Soil erosion during earthworks, construction and operational phases.
- Air pollution in the form of dust during construction, and emission from vehicle exhausts.
- Soil contamination during construction.
- Underground water pollution.
- Stockpiling.
- Location of construction camp.
- Littering and solid waste.
- Heritage objects and fossils.



- Concrete mixing.
- Alien plants - eradication that might invade the area after earthworks.
- Noise pollution during construction phase.
- Traffic Management.
- Health and Safety.
- Visual impact.
- Social and economic impacts that may include

#### *Positive impacts of the activity*

The Socio-economic study is currently underway, which will expand on the socio – economic impacts of the project. The project will contribute in local economic development for the broader area. The local unemployed people and small businesses will benefit in terms of jobs during the construction and operational phases of the project. Suppliers and sub-contractors will also benefit, especially during the construction phase of the project.

Several skills will be required for the completed project like petrol attendants, security staff, cashiers, receptionists, housekeeping, chefs, waitress, gardeners, supervisors and so forth.

The motorists travelling along the main road MR 483 will be able to rest and refresh using this Service Station, and this will prevent fatigue which is one of the main courses of accidents in South Africa.

#### *Negative impacts of the activity*

The construction and operational phases have to safeguard against any possible environmental degradation like soil erosion that may be caused during earthworks. The project has to safeguard against any possible underground and surface water pollution.

The project has to safeguard against soil contamination due to concrete mixing and possible oil spillages. Air pollution in the form of dust during the construction phase that may be generated and dispersed to the neighbouring properties, road and passersby. Risk of fire and explosion due to the nature of the petroleum products stored on site.

Increase in ambient noise levels from construction machinery, workers on site and passersby. Emissions due to construction traffic as trucks deliver material on site, and the plant working on site. Waste that will be generated during construction and operational phases of the project. Health and safety risk to workers and residents during construction.

The EIA Regulations, 2014 as amended stipulates requirements that need to be adhered to and objectives to be reached when undertaking environmental impact assessment. Key to a successful EIA is the accurate identification of environmental and social impacts and the subsequent assessment of the likely significance of each impact. This will assist in facilitating the prioritization of impacts, the identification of fatal flaws and the identification of mitigation measures.

**Table 3: interpretation of the overall significance of impacts is presented below**

Scoring value	Significance
>35	<b>High – The impact is total / consuming / eliminating</b> – In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or some combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt. Mitigation may not be possible / practical. Consider a potentially fatal flow in the project.
25 – 35	<b>High – The impact is profound</b> – In the case of adverse impacts, there are few opportunities for mitigation that could offset the impact, or mitigation has a limited effect on the impact. Social, cultural and economic activities of communities are disrupted to such an extent that their operation is severely impeded. Mitigation may not be possible / practical. Consider a potential fatal flaw in the project.
20 - 25	<b>Medium – The impact is considerate / substantial</b> – The impact is of great importance. Failure to mitigate with the objective of reducing the impact to acceptable levels could render the entire project option or entire project proposal unacceptable. Mitigation is therefore essential.
7 - 20	<b>Medium - The impact is material / important to investigate</b> – The impact is of importance and is therefore considered to have a substantial impact. Mitigation is required to reduce the negative impacts and such impacts need to be evaluated carefully.
4 - 7	<b>Low – The impact is marginal / slight / minor</b> – The impact is of little importance, but may require limited mitigation; or it may be rendered acceptable in the light of proposed mitigation.
Scoring value	Significance
0 - 4	<b>Low – The impact is unimportant / inconsequential / indiscernible</b> – no mitigation required, or it may be rendered acceptable in light or proposed mitigation.

The significant rating of each identified impact was then reviewed by the EAP through professional judgement and checklists. The checklist entails comprehensive list of possible environmental effects and impacts. In assessing each impact and its significance the evaluation was based on the following elements:

#### Nature of the impact

The environmental impacts of a project are those resultant changes in environmental parameters, in space and time, compared with what would have happened had the project not been undertaken or if the no-go option was adopted.

**Extent** - This talk to the physical and spatial scale of the impact. Below are some of the standard terms used in assessment relating to the extent.

**Table 4 - Extent**

RATING	EXTENT SCALE
7	<b>International</b> - The impacted area extends beyond national boundaries.
6	<b>National</b> – The impacted area extends beyond provincial boundaries.
5	<b>Ecosystem</b> – The impact could affect areas essentially linked to the site in terms of significantly impacting ecosystem functioning.
4	<b>Regional</b> – The impact could affect the site including the neighbouring areas, transport routes and surrounding towns e.g. at the KZN Provincial level.

3	<b>Landscape</b> – The impact could affect all areas generally visible to the naked eye, as well as those areas essentially linked to the site in terms of ecosystem functioning.
2	<b>Local</b> – The impacted area extends slightly further than the actual physical disturbance footprint and could affect the whole, or a measurable portion of adjacent areas. Normally within a radius of 2 km from the site.
1	<b>Site Related</b> – This is an impact within the boundaries of the construction site or the development footprint. The loss is considered inconsequential in terms of the spatial context of the relevant environmental or social aspect.

**Magnitude** - This provides a qualitative assessment of the severity of a predicted impact. Below are some of the standard terms used in assessment relating to this indicator.

**Table 5 - Magnitude**

RATING	MAGNITUDE SCALE
7	<b>Total / eliminating</b> – Function or process of the affected environment is altered to the extent that it is permanently changed.
6	<b>Profound / considerate / substantial</b> – Function or process of the affected environment is altered to the extent where it is permanently modified to an extent of temporal cease.
5	<b>Material / important</b> – The affected environment is altered, but function and process continue, albeit in a modified way.
4	<b>Discernible / noticeable</b> – Function or process of the affected environment is altered to the extent where it is temporarily altered, be it in a positive or negative manner.
3	<b>Marginal / slight / minor</b> – The affected environment is altered, but natural function and process continue.
2	<b>Unimportant / inconsequential / indiscernible</b> – The impact temporarily alters the affected environment in such a way that the natural processes or functions are negligibly affected.
1	This is where there will be no impact on the environment.

**Duration** - This describes the timeline of the predicted impact. Below are some of the standard terms used in assessment relating to duration.

**Table 6 - Duration**

Rating	DURATION SCALE
7	<b>Long term</b> – Permanent or more than 15 years post decommissioning. The impact remains beyond decommissioning and cannot be negated.
3	<b>Medium term</b> – Lifespan of the project. Reversible between 5 to 15 years post decommissioning.
1	<b>Short term</b> – The impacts will be easily reversible with the adoption of mitigation measures. This will happen during the project lifespan. The impact will either be remedied with mitigation or will be mitigated through natural processes within the project phase i.e. within 0 – 5 years.

**Irreplaceability / Loss of resources** - Environmental resources cannot always be replaced; once destroyed, some may be lost forever. It may be possible to replace, compensate or reconstruct a lost resource in some case. The loss of a resource may become more serious later, and the assessment must take this into account. Below are some of the standard terms used in assessment relating to duration.

Table 7 - Irreplaceability / Loss of resources

RATING	IRREPLACEABILITY / RESOURCE LOSS SCALE
7	<b>Permanent</b> – The loss of a non-renewable / threatened resource which cannot be renewed / recovered with, or through, natural process in a time span of over 15 years, or by artificial means.
5	<b>Long term</b> – The loss of a non-renewable / threatened resource which cannot be renewed / recovered with, or through, natural process in a time span of over 15 years, but can be mitigated by other means.
4	<b>Loss of an 'at risk' resource</b> – one that is not deemed critical for biodiversity targets, planning goals, community welfare, agricultural production, or other criteria, but cumulative effects may render such loss as significant.
3	<b>Medium term</b> – The resource can be recovered within the lifespan of the project. The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years.
2	<b>Loss of an 'expendable' resource</b> - one that is not deemed critical for biodiversity targets, planning goals, community welfare, agricultural production, or other criteria.
1	<b>Short-term</b> – Quickly recoverable. Less than the project lifespan. The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span shorter than any of the project phases, or in a time span of 0 to 5 years.

**Reversibility** - The distinction between reversible and irreversible impact is a very important one and the irreversible impacts not susceptible to mitigation can constitute significant impacts in an EIA process. The potential for rehabilitation is the major determinant factor when considering the temporal scale of most predicted impacts. Below are some of the standard terms used in assessment relating to reversibility.

Table 8 - Reversibility

RATING	REVERSIBILITY SCALE
7	<b>Long term</b> – The impact will never be returned to its original or benchmark state. The impact cannot be reversed.
3	<b>Medium term</b> – The impact / effect will be returned to its original or benchmark state through mitigation or natural processes in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
1	<b>Short term</b> – The impact / effect will be returned to its original or benchmark state through mitigation or natural processes in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.

**Probability** - The assessment of the probability / likelihood of an impact / effect has been undertaken in accordance with ratings and descriptors provided below.

Table 9 - Probability

RATING	PROBABILITY SCALE
1.0	Absolute certainty / will occur

0.9	Never certainty / very high probability
0.7 – 0.8	High probability / to be expected
0.4 – 0.6	Medium probability / strongly anticipated
0.3	Low probability / anticipated
0.2	Possibility
0.0 – 0.1	Remote possibility / unlikely

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

There are no alternative sites, as a result we had to focus on this specific site (preferred site). The site visit, and site walk while analyzing and observing the physical environment on the project site. Desktop analysis of the site using google image, map analysis like National Wetlands map & aerial images, SAHRIS heritage programme and South African protected Conservation Areas database (SAPAD). We also used professional judgment, observation on site and past experience.

We have consulted stakeholders and tapped on their knowledge of the area. We have also discussed with the land owner who has been the owner of this land for over 3 decades. We have also studied literature and Specialists studies relating to this site.

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

*Positive impacts of the activity*

The local unemployed people and small businesses will also benefit in terms of jobs during the construction and operational phases of the project. The local economic development for the greater Newcastle area will be enhanced by this project. Suppliers and sub-contractors will benefit during the construction phase, as well as during the operational phase. The project will contribute in skills development for the area in that the locals will get an opportunity in new skills like being petrol attendants, cashiers, waitress and so forth.

The motorists travelling along the main road MR 483 will be able to rest and refresh using this Service Station, and this will prevent fatigue which is one of the main courses of accidents in South Africa.

*Negative impacts of the activity*

The construction and operational phases have to safeguard against any possible environmental degradation like soil erosion that may be caused by the development footprint. The project has to safeguard against an unlikely underground water pollution. The project has to safeguard against soil contamination by machinery during earthworks and construction phase. The construction of the project of this nature, operating 24 hours a day will be a visual intrusion on the landscape. The project of this nature poses a risk of fire and explosion due to the nature of the petroleum and gas products stored on site, albeit the strict regulations guiding such storage on site.

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

*Mitigation* - In the assessment process the potential to mitigate the negative impacts is determined and rated for each identified impact. The significance of environmental impacts has therefore been assessed considering any proposed mitigation measures.

- Reduction of soil erosion by ensuring that the soil has ground cover at all times.
- Ensuring that noise levels are within legally acceptable levels during the construction phase. The noise is not supposed to exceed the legal limit of 7 dB (A).
- Landscaping on site to prevent soil erosion.
- Ensuring that there is no pollution taking place on site during construction and post construction by continuous monitoring by the Environmental Control Officer. Vehicles on site must not have their engines running unattended, they must be switched off when stationary.
- Ensuring that waste is disposed in line with acceptable environmental standards.
- Stormwater management need to be implemented as per the recommendations of the Stormwater plan.
- Implementation of the EMP and its recommendations.
- Safeguard against pollution of water resources.
- The use of fuel tanks that are in compliance to SABS standards and relevant SANS.
- Security measures need to be put in place, like 24-hour security and CCTV cameras.

**(ix) The outcome of the site selection matrix**

There has been no comparison of sites, as the preferred site is the only site assessed. Therefore, there has not been any site selection matrix applied.

**(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such**

There has been no alternative site assessed as highlighted above.

The motivation for the preferred site is as follows:

- The site has been leased by the proponent for this specific activity due to its ideal location from the business perspective as per the requirements of the petroleum industry, among other things that look at accessibility, visibility, environmental sustainability and size.
- The site has not shown any serious environmental and other flaws.
- It will be uneconomical to search for another site, whereas this site is already zoned by the local municipality as Fuel Service Station.
- The proposed development will be located on an adequate one (1) hectare site.
- There are no households and settlement that will be disrupted by the construction of this project.
- The MR 483 road is of good quality.
- The location is appealing for motorists travelling on the main road MR 483 both bounds.

**(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity**

It is deemed practical to make use of this site on Portion 8 of Farm Johnstown No. 8799 as opposed to abandoning it for another site. The choosing of any new site will mean abandoning this

site and buying another one elsewhere which may not be economically feasible. Moreover, the site is already zoned Fuel Service Station by the local municipality.

**(I) A FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS THE ACTIVITY WILL IMPOSE ON THE PREFERRED LOCATION THROUGH THE LIFE OF THE ACTIVITY, INCLUDING –**

The team walked the preferred site while making observations.

Desktop analysis of the site was done using google images, map analysis like National Wetlands map & aerial images, SAHRIS heritage programme and South African Protected Conservation Areas database (SAPAD). We also used professional judgment, observation on site and past experience. The stakeholders were consulted widely, including the locals to tap on their knowledge of the area.

We did literature review of the area, and also used the knowledge of specialists as per the Specialists Studies conducted.

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

- Soil erosion during earthworks and operational phases.
- Air pollution in the form of dust during construction.
- Soil contamination during construction.
- Underground water pollution.
- Stockpiling on site.
- Location of construction camp.
- Littering and solid waste.
- Heritage objects and fossils.
- Concrete mixing.
- Alien plants - eradication that might invade the area after earthworks.
- Noise pollution during construction phase.
- Traffic Management.
- Health and Safety.
- Visual impact.

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

**Table 10 – Impacts and mitigation**

Impact and risk	Description / Significance	Mitigation
Soil erosion / earthworks	<ul style="list-style-type: none"> <li>• The earthworks may lead to soil erosion on site.</li> </ul>	<ul style="list-style-type: none"> <li>• Any noticeable erosion gullies on site must be dealt with – implement anti-erosion measures.</li> <li>• Reuse topsoil to rehabilitate disturbed areas.</li> <li>• Prevent soil erosion by</li> </ul>

		<p>maintaining the grass cover on site.</p> <ul style="list-style-type: none"> <li>• Stormwater plan will control all stormwater which may lead to soil erosion on site.</li> </ul>
Air pollution	<ul style="list-style-type: none"> <li>• Dust from earthworks.</li> <li>• Vehicle fumes</li> </ul>	<ul style="list-style-type: none"> <li>• Suppression of dust by watering the project site as and when necessary during construction.</li> <li>• Vehicles and machinery to be properly and regularly serviced</li> <li>• Vehicle engines to be switched off when stationary, and drivers must not allow engines to run unattended.</li> </ul>
Soil contamination	<ul style="list-style-type: none"> <li>• Concrete mixing must not spill onto the soil during construction.</li> <li>• Oil and chemicals contaminating soil during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent soil contamination by not mixing any concrete on the soil</li> <li>• Vehicles must not be allowed to drip oil, and drip trays must be used when vehicles are parked on site.</li> <li>• Vehicles must not be repaired on site as to cause soil contamination.</li> </ul>
Stormwater and water management	<ul style="list-style-type: none"> <li>• Contamination of ground and surface water.</li> <li>• Accidental spillages of Petro chemicals from vehicles and equipment</li> <li>• Erosion gullies</li> <li>• The tanks pose a risk of leak onto to the underground water resources.</li> </ul>	<ul style="list-style-type: none"> <li>• The Stormwater and Drainage report attached as <b>Appendix E (3)(a)</b>, must be implemented to the letter.</li> <li>• Before and after construction the site must be graded, and no ponding of water on site must be allowed.</li> <li>• The platform must be graded to prevent ponding and ingress of water into the newly emplaced fills and the deeper soils.</li> <li>• Rainwater harvesting must be adopted on site.</li> <li>• The tanks must be SABS compliant and in line with relevant SANS as detailed above in this report.</li> <li>• The base of the fuel tank excavations must be flat and free of rocks, compacted to specification with the correct backfill material and prepared using accepted SANS standards to ensure stability of underground</li> </ul>



		<p>tanks.</p> <ul style="list-style-type: none"> <li>• All pipe-work must be double walled and comply with SANS 62- 1 and 2'SANS 1132 (pipework).</li> <li>• Absorbent spill kits and disposal containers must be provided to workers to handle spillages.</li> <li>• The underground storage tanks must be designed and installed in accordance with the SABS Standards (South African Bureau of Standards, SABS 089-3-1999'and Third Edition. Code of practice – The petroleum industry, Part 3: The installation of underground storage tanks, pumps/dispensers and pipework at service station and consumer installations). SANS standards adequately address various potential impacts via the implementation of required engineering measures</li> <li>• An emergency preparedness and Response Plan must be implemented for the site.</li> </ul>
Stockpiling	<ul style="list-style-type: none"> <li>• Stockpiling will be done on site, within a clearly demarcated area.</li> </ul>	<ul style="list-style-type: none"> <li>• No stockpiling must take place within 150 metres of a watercourse. There are no water resources in the vicinity of the site.</li> </ul>
Location of construction camp	<ul style="list-style-type: none"> <li>• There may be no need for a construction camp as most of the workers will be from the area.</li> </ul>	<ul style="list-style-type: none"> <li>• No need for a construction camp, as workers will be locals.</li> </ul>
Destruction and disturbance of graves and heritage resources.	<ul style="list-style-type: none"> <li>• The project will have to be on the watch for any heritage objects that may be found during earthworks phase.</li> </ul>	<ul style="list-style-type: none"> <li>• In case of any heritage object found during earthworks, the project must stop, and such must be reported to Amafa.</li> <li>• The recommendations of the heritage report must be followed.</li> </ul>
Littering / Solid waste	<ul style="list-style-type: none"> <li>• The project must take care for the site not to be polluted by such things as litter by workers on site, oil spills, building</li> </ul>	<ul style="list-style-type: none"> <li>• Solid waste must be disposed of at the nearest disposal site, with proof of responsible disposal method whenever requested. In</li> </ul>

	<p>material, papers, cans and bottles.</p> <ul style="list-style-type: none"> <li>• Possible waste – plastics, metal, wood, concrete and so forth.</li> </ul>	<p>this instance it will be the Newcastle Municipal dumping site. In all likelihood the bulk of solid waste generated will be in the category of general waste.</p> <ul style="list-style-type: none"> <li>• However, it is anticipated that some hazardous waste may be generated which will be disposed of appropriately in the landfill site that accepts such type of waste. Hazardous waste defined as waste that poses substantial or potential threat to public health and the environment. This includes waste that tends to ignite, reactive, corrosive and toxic.</li> <li>• Chemical waste must be stored in appropriate containers and disposed of at an appropriate disposal site.</li> <li>• Rubbish drums and refuse plastic bags will have to be made available for litter during the day, to be cleared and disposed of at the municipal disposal site at appropriate intervals as advised by the Environmental Control Officer.</li> <li>• All construction spoil must be disposed of at the municipal disposal site.</li> <li>• No burning of refuse must take place on site.</li> </ul>
Alien invaders	<ul style="list-style-type: none"> <li>• Invasion by alien plants, especially opportunistic invaders.</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunistic invader plants will be eradicated.</li> <li>• Alien plants will be eradicated on project completion.</li> </ul>
Concrete mixing	<ul style="list-style-type: none"> <li>• There will be concrete mixing on site, but it will be brought on site by the readymade concrete mixer.</li> </ul>	<ul style="list-style-type: none"> <li>• Where necessary, the mixing of concrete must be done within the bunded area.</li> <li>• All spillages must be removed and properly disposed of.</li> </ul>
Noise (construction phase)	<ul style="list-style-type: none"> <li>• There will be noise on site due to construction activities, especially vehicles and machinery.</li> </ul>	<ul style="list-style-type: none"> <li>• Machinery and equipment used during construction phase must be properly serviced.</li> <li>• No construction must take place during the night as to disturb the peace of the area.</li> <li>• No construction must take place during Sundays and public</li> </ul>

		holidays.
Traffic management	<ul style="list-style-type: none"> <li>• There will be an increase of traffic flow in the vicinity of the site during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• The recommendations of KZNDOT will have to be implemented to the letter.</li> <li>• Flag persons will be used to control traffic as may be necessary.</li> <li>• The 40 km speed signs will be erected on site, in order to control traffic speed and avoid accidents.</li> </ul>
Health and Safety	<ul style="list-style-type: none"> <li>• The movement of people within the site must be controlled through the security entry and register.</li> <li>• The site will have a dedicated Safety Officer.</li> <li>• Construction vehicles must not pose a threat to the safety of local pedestrians</li> <li>• The workers must be provided with mobile toilets on site.</li> <li>• Fire and explosion always pose danger to projects of this nature.</li> <li>• The project needs to put security measures in place to safeguard against criminal elements, as this may spill over to the workers and the community members.</li> </ul>	<ul style="list-style-type: none"> <li>• Safety officer must be appointed to deal with all safety issues on daily basis during construction.</li> <li>• Safety induction must be done on commencement of construction.</li> <li>• Protective clothing must be worn by workers at all times.</li> <li>• Safety file and Safety officer to be on site, especially during construction phase.</li> <li>• Safety signs and speed limits erected on site.</li> <li>• The mobile toilets on site must be kept clean and serviced regularly.</li> <li>• Fire extinguishers must be readily available onsite and easily accessible.</li> <li>• Firefighting equipment must comply with SANS 1151 and must be inspected regularly.</li> <li>• No smoking may be allowed onsite, especially near flammable materials.</li> <li>• No cell phones may be used during fuel dispensing during operational stage.</li> <li>• An emergency Response Plan must be implemented for the site, for emergency procedures. The ERP must include emergency contact numbers.</li> <li>• Staff must be trained adequately to avoid and handle high risk situations.</li> <li>• 24-hour security and CCTV cameras will have to be put in place and installed to safeguard against criminal elements.</li> </ul>

Visual impact	<ul style="list-style-type: none"> <li>The construction of the Service Station, small shops and food outlet will be a noticeable structure along the main road MR 483.</li> <li>External lighting is likely to impact on the landscape, especially at night.</li> </ul>	<ul style="list-style-type: none"> <li>The external lights must be inward and downward facing and shielded to prevent visual impacts.</li> </ul>
Socio economic impacts –	<ul style="list-style-type: none"> <li>Creation of employment opportunities for skilled and non-skilled employees.</li> <li>Skills developments to local communities.</li> <li>Possible opportunities for the local suppliers and sub-contractors.</li> <li>Crime.</li> </ul>	<ul style="list-style-type: none"> <li>Prioritisation of the locals in terms of employment, unless if the skill is not available locally.</li> <li>Complaint register must be accessible on site to the members of the public.</li> <li>Installation of CCTV cameras, and putting in place 24-hour security measures.</li> </ul>
Economic impacts	<ul style="list-style-type: none"> <li>The proposed development will provide permanent employment opportunities to some residents of Osizweni, Johnstown.</li> <li>The project will serve as a catalyst for the identified node.</li> <li>Criminal elements trying to rob the Facility.</li> </ul>	<ul style="list-style-type: none"> <li>Installation of CCTV cameras, and putting in place 24-hour security measures.</li> </ul>

Cumulative impacts affect the significance ranking of an impact since it considers impacts from both on and off site. The challenge is when the impacts that are considered within standards if combined may be cumulative in nature to the level that may exceed the set standards. In this regard it is important to consider impacts in terms of their cumulative nature.

**Table 11 – Cumulative impacts**

Impact and risk	Cumulative impacts (past, current and foreseeable)
Soil erosion	None on site.
Air pollution	None anticipated.
Soil contamination	None anticipated.
Stormwater and water resources	Not foreseen, with a stormwater plan in place.
Stockpiling	None anticipated.
Location of construction camp	Not foreseen
Destruction and disturbance of graves and heritage resources	Not foreseen
Littering and solid waste	Unlikely to be cumulative

Concrete mixing	Not cumulative in this instance
Noise (construction phase)	Not cumulative
Traffic management	Not cumulative
Health and Safety (construction phase)	Not cumulative
Health and Safety (operational phase)	Not cumulative
Visual impact	Not cumulative

**(J) AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK, INCLUDING –**

- Cumulative impacts that may occur as a result of the undertaking of the listed activity during the project life cycle;
- The nature, significance and consequence of the impact and risk;
- The extent and duration of the impact and risk;
- The probability of the impact and risk occurring;
- The degree to which the impact and risk can be reversed;
- The degree to which the impact and risk may cause irreplaceable loss of resources; and
- The degree to which the impact can be mitigated.

**Table 12: Assessment of negative impacts of the preferred site and layout**

<b>Impact and risk</b>	<b>Magnitude</b>	<b>Duration</b>	<b>Extent</b>	<b>Reversibility</b>	<b>Irreplaceability/ Loss of resources</b>	<b>Probability</b>	<b>Significance with mitigation</b>
Soil erosion	Unimportant.	Short term.	The loss is considered inconsequential	Medium - term	Short - term.	Probable.	See Table 13 below
Air pollution	Unimportant	Short term	The loss is considered inconsequential.	Short term	Short-term	Probable	See Table 13 below
Soil contamination	Unimportant.	No impact on the environment	The loss is considered inconsequential.	Short term	Short-term	Probable	See Table 13 below
Stormwater and water management	Unimportant	Short term	Extends slightly further than site	Short term	Medium term	Probable	See Table 13 below
Stockpiling	No impact on the environment	Short term	The loss is considered inconsequential	Short term	Medium term	Remote possibility	See Table 13 below
Location of construction camp	No impact on the environment	Short term	The loss is considered inconsequential	Short term	Medium term	Remote possibility	See Table 13 below

Destruction and disturbance of graves and heritage resources	No impact on the environment	Short term	The loss is considered inconsequential	Short term	Not deemed critical for heritage objects.	Remote possibility	See Table 13 below
Littering and solid waste	Unimportant	Short term	The loss is considered inconsequential	Short term	Short term	Low probability	See Table 13 below
Concrete mixing	Unimportant	Short term	The loss is considered inconsequential	Short term	Short term	Low probability	See Table 13 below
Noise (construction phase)	Unimportant	Short term	The loss is considered inconsequential	Short term	Short term	Probable	See Table 13 below
Traffic management	Unimportant	Short term	The loss is considered inconsequential	Short term	Short term	Probable	See Table 13 below
Health and Safety (construction phase)	Unimportant	Short term	The loss is considered inconsequential	Short term	Medium term	Probable	See Table 13 below
Health and Safety (operational phase)	Noticeable	Short term	Extends slightly further than site	Short term	Medium term	Remote possibility	See Table 13 below
Visual impact	Slight and minor	Short term	Extends slightly further than site	Short term	Medium term	Probable	See Table 13 below

The overall significance of an impact / effect has been ascertained by attributing numerical ratings to each identified impact. The numerical scores obtained for each identified impact have been multiplied by the probability of the impact occurring before and after mitigation. High values suggest that a predicted impact / effect is more significant, whilst low values suggest that a predicted impact / effect is less significant.

**Table 13: Ranking and scoring of negative impacts of the preferred site and layout**

Impact and risk	Magnitude		Duration		Extent		Resource Loss	Reversibility		Probability		Significance Without mitigation	Significance with mitigation
	With out	With	With out	With	With out	With		With out	With	With out	With		
Soil erosion													
	2	1	3	1	2	1	1	3	1	0.3	0.2	3.3	1

Air pollution (dust)	2	1	3	1	2	1	1	3	1	0.2	0.1	2.4	0.5
Soil contamination	2	1	3	1	2	1	1	3	1	0.2	0.1	2.2	0.5
Water pollution	4	2	3	1	3	2	3	3	1	0.4	0.2	6.4	1.8
Stockpiling	2	1	3	1	2	1	1	3	1	0.2	0.1	2.2	0.5
Location of construction camp.	2	1	3	1	2	1	1	3	1	0.2	0.1	2.2	0.5
Heritage resources	1	1	1	1	1	1	1	1	1	0.2	0.1	1	0.5
Solid waste	3	2	3	1	2	1	1	3	1	0.6	0.3	7.2	1.8
Concrete	3	2	3	1	2	1	1	3	1	0.6	0.3	7.2	1.8
Noise - construction phase	3	2	2	1	2	1	1	1	1	0.4	0.2	3.6	1.2
Traffic	3	2	3	1	3	1	1	7	1	0.4	0.2	6.8	1.2
Health and Safety (construction)	4	2	3	1	3	1	3	3	1	0.4	0.2	6.4	1.6
Health and Safety (operational)	5	4	3	2	3	2	3	3	1	0.2	0.1	3.4	1.2
Visual impact	4	3	3	1	2	1	2	3	1	0.3	0.2	4.2	1.6
<b>Average</b>												<b>4.8</b>	<b>0.1</b>

Low	Low
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## Significance

In the context and highlight of the significance scoring outlined above, the Bra Cass Service Station and food outlet is minimal and can be mitigated. The overall significance impact for both options without mitigation, is considered to be LOW, with a score of 4.8. When mitigation is taken into consideration, the overall impact significance is considered to be again LOW, with a score of 0.1.

There are no alternative sites that have been analysed, and therefore no way of comparing the impacts for alternatives. However, our assessment is that the economic benefits to the community of Osizweni, Johnstown, Newcastle far outweighs the impacts that can be mitigated like underground water resources, soil erosion, social impacts and so forth. This benefit talks to the jobs, a place to refresh for motorists which may considerably contribute in the reduction of road fatigue and road accidents. The project is likely to serve as the necessary catalyst in kick-starting the node for economic growth. The no-go option will offer very little benefit to the local and broader economy when one considers the findings of the assessment and of the socio-economic assessment.

Accordingly, it is the opinion of the EAP that there is no significant reason why the project cannot be authorized in comparison to the no-go option.

**(K) WHERE APPLICABLE, A SUMMARY OF THE FINDINGS AND IMPACT MANAGEMENT MEASURES IDENTIFIED IN ANY SPECIALISTS REPORT COMPLYING WITH APPENDIX 6 TO THESE REGULATIONS AND AN INDICATION AS TO HOW THESE FINDINGS AND RECOMMENDATIONS HAVE BEEN INCLUDED IN THE FINAL REPORT;**

**THE FOLLOWING SPECIALISTS STUDIES ARE ATTACHED AS APPENDICES E:**

### **Specialists reports and Studies**

#### **Socio – economic Study prepared by Mabune Consulting – APPENDIX E (1)**

In general terms, the study of socio-economic components incorporates various aspects relating to prevailing social, cultural and economic conditions within the study area. The socio-economic study includes analysis of demographic structures, population dynamics, infrastructure resources, status of human health and economic attributes like employment, and income in the study area.

The study incorporates several impacts on the socio-economic environment that has been discussed by the report. These relate to surface and groundwater contamination, topography and hydrology, noise, air quality, heritage impact, need and desirability, feasibility impacts, traffic impacts, impacts on other filling stations, risk of fire and explosion, safety and security

The report talks to adverse effects of the project that includes air pollution from emissions and car exhausts, especially when vehicles are left unattended in the forecourt during the operational phase. This can be mitigated by ensuring that drivers switch off engines when in the forecourt and within the Service Station premises.

Some of the social impacts will include visual impact, pollution, crime, fuel odour, noise and lifestyle impacts. The lifestyle referring to getting some items closer to the place of one's residence.



The economic impacts can be both positive and negative. Some of the negative impacts will include noise and how properties can be affected by the Service Station. Whereas the positive economic impacts will include employment opportunities during both construction and operational phases of the project, and stimulation of the local economy.

As much as there could be an impact on existing Service Stations, but the study has noted a steady increase of fuel demand over the years. The report identified two service stations within this radius.

The project is likely to contribute in job creation and provision, especially for people with lower educational levels, as some of the jobs likely to be created can easily absorb people with no specific skills, with little training and skills required. The skills that may be acquired during the construction phase can be used by project beneficiaries in the long term. The unemployment rate is quite high in Newcastle, up to 32% as contained in the report.

The study maintains that with the population and economy growing drastically it is inevitable that more vehicles will be in use for transportation of people, goods and services, hence the need for a new Service Station. This proposed Service Station along with the stores / shops will definitely facilitate employment opportunities during the construction and operational phases. Moreover, the Service Station will also serve as a convenient stop for those who need essential items and don't want to go into the town or mall to obtain such items.

The volume of fuel sales has been regarded by the service stations as confidential. The impacts of the operational stage are said to be minimal except the highlighted risk of safety and security.

In conclusion, the report has noted the growing population at Newcastle, and this result in the need for job opportunities. The construction and operational phases of the project will contribute in the economy of the area. The study also concluded that the impact on the two existing service stations does not mean they will be economically unviable, given that MR483 is a busy road that warrants an additional Service Station.

#### **Geotechnical Study prepared by GeoPro (Pty) Ltd – APPENDIX E (2)**

The objective of the investigation was to establish the nature and engineering properties of the underlying soil on the project site. It was also to assess the suitability of the proposed areas, from a geotechnical perspective, and give an overview of the subsurface conditions for the proposed development which will be situated on this site.

According to the Geotechnical report, the general area within which the site is located is underlain by Ecca Group Sandstone that belong to the Karoo Supergroup that is estimated to be 180 – 300 million years old. In general terms, these rocks will decompose insitu, forming residual soils that may be silty. The report asserts that these soils are often blanketed by a considerable thickness of transported soils of colluvial and alluvial origin that consist of silty sands.

Two trial pits were profiled to a minimum and maximum permissible depth of 1000mm and 1120mm on site. Two (2) Dynamic Cone Penetration (DCP) tests were carried out to a maximum permissible depth as outlined above. Six (6) soil samples were collected from the two (2) trial pits and sent to Geopro Civil Material Testing Laboratory for analysis.

The side walls of the trial pits were excavated vertically and there was no evidence of potential collapse within the sidewalls of the trial pit (s). This effectively indicates that the material encountered in the trial pits was not too coarse. The trial pits were profiled in accordance with the standard method of profiling recommended by the Guidelines for Soil and Rock logging in South Africa.

The Geotechnical report concluded that the excavation of the trial pits showed that all of the pits were stable. However, as a safety precaution all excavations exceeding 1.5m must adhere to the safety regulations and must receive adequate shoring.

Furthermore, the excavation results showed that for trial pit 1 and trial pit 2 no refusal of the dynamic cone penetration test probe was encountered, therefore soft to intermediate excavations can be expected. No subsurface water seepage was encountered whatsoever in the trial pits.

The report maintains that all structures are to be found on hard solid ground. However, the services of a structural engineer should be acquired for the designing of the foundation to the appropriate forces that the structure is expected to exert the foundation and in turn on the ground.

**Stormwater Plan, Water Supply and Drainage Report prepared by BWS Metsi and Civil Engineers CC - APPENDIX E (3)(a)**

The total demand for the proposed project has been calculated to be 0,5999 in l/s. It is envisaged that 6 x 10 000 litres of JoJo tanks are to be kept on site for emergencies. Regarding sewer, it is anticipated that the total design flow will be 0,103 in l/s.

Rainwater harvesting has to be encouraged on site. Borehole can also serve as an additional source of water supply for the project in future.

The parking and the surface runoff from the buildings and surrounding will produce 39 l/s, and therefore a 900mm deep x 300mm deep concrete channel will efficiently drain storm water towards the area parallel to the road and the developments of the site.

In the main the report presented and discussed the water supply, storm water and sewer drainage of the site, and it is the view of the Engineer that the developments are safe as designed, and should be implemented as per the provided calculations.

**Heritage Assessment report & Palaeological material investigation prepared by Umlando Archaeological Surveys & Heritage Management and Dr Smith respectively - APPENDIX E (4)**

Umlando Archaeological Surveys and Heritage Management was requested to assist with regard to the Heritage Impact Assessment. They accordingly carried a desktop study analyzing maps for evidence of prior habitation on study area, as well as for previous archaeological surveys. The archaeological database indicated that there were archaeological sites in the general area as shown under Figure 5 of the report. According to their assessment the said sites include all types of Stone Age and Iron Age sites, however none occur in the study area, and on site.

Furthermore, no national monuments, battlefields, or historical cemeteries are known to occur in the study area. There is one cemetery predating 1944, as per Figure 6 of the report.

Regarding palaeological material, the assessment was carried by Dr Smith working together with Umlando Archaeological Surveys and Heritage Management. He found that the study area is of very high palaeontological sensitivity. Dr Smith summarised his findings as follows: "the proposed site is underlain by Volksrust Formation shales. It is flat and deeply weathered. The Volksrust Formation can be fossiliferous, but is unlikely to contain any significant palaeontological material".

The proposed site has existing buildings and is highly disturbed and so any palaeontological material would

have been destroyed. Dr Smith stated that there was no reason to proceed to a desk top PIA investigation. The PIA letter of exemption has been furnished.

The report has been submitted to KwaZulu – Natal Amafa and Research Institute for their final comments.

**Traffic count – Appendix E (5)**

There is sufficient traffic flow to warrant the Service Station as confirmed by BP South Africa.

**(I) AN ENVIRONMENTAL STATEMENT WHICH CONTAINS -**

***(i) a summary of the key findings of the environmental impact assessment;***

It is critical that the project phases adhere to the conditions stated in the report, specialists studies and the EMPr for the proposed Bra Cass Service Station, small shops and food outlet project. In this regard it is therefore unlikely for the project to have a significant impact on the receiving environment in the long term.

The main positive impact relates to jobs that will be created by the project, and its catalytic nature in terms of this node. The project is therefore likely to have a greater positive social impact in the Newcastle area.

However, on the other hand it must be ensured that the project does not affect any of the resources like underground resources. The project must ensure there is no soil erosion taking place on site. The project must put measures in place to ensure health and safety. The post construction rehabilitation must ensure that landscaping and ground cover is maintained on site. All material used during construction will have to be removed from site to the disposal site, so that the environment is left in a good state. The opportunistic alien plants must be eradicated on site.

In the broader scheme of things, the impacts anticipated in the project site are of insignificant nature, and can be mitigated as outlined above, and also emphasized in the EMPr.

In the final analysis, social, economic and environmental factors must be weighed against the mitigatory measures advanced by the actual assessment and other reports where applicable and takes everything together for a balanced and well thought decision. Overall, the identified impacts can be mitigated as long as the recommendations of the Specialists studies and Environmental Management Programme are followed to the letter. Therefore, the EA if granted, and the EMPr will be very crucial during all phases of the project. The EMPr will guide all environment related issues during all phases of the project from planning, pre-construction, construction and operational phase.

***(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and***

There are no significant environmental sensitivities on this site. There are no specific areas that need to be avoided.

***(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;***

*Positive implications of the activity*

The positive spinoffs relate to job creation and business opportunities. The project will enhance the node in terms of future development.

*Negative implications of the activity*

The project has to safeguard against any possibility of erosion, especially during earthworks. It has to safeguard against any spillages that may impact on ground water resources. As highlighted above security measures must be put in place.

**(M) BASED ON THE ASSESSMENT, AND WHERE APPLICABLE, IMPACT MANAGEMENT MEASURES FROM SPECIALISTS REPORTS, THE RECORDING OF THE PROPOSED IMPACT MANAGEMENT OUTCOMES FOR THE DEVELOPMENT FOR INCLUSION IN THE EMPr;**

Erosion on site will be avoided through the implementation of a Stormwater Management Plan. Care must also be exercised to prevent contaminated water, oil and fuel from migrating into the environment from both surface water runoff and from leaking fuel storage tanks. CCTV cameras and 24-hour security must be in place. There will be proper landscaping on project completion. All these measures have been incorporated onto the EMPr.

**(N) ANY ASPECTS WHICH WERE CONDITIONAL TO THE FINDINGS OF THE ASSESSMENT EITHER BY THE EAP OR SPECIALIST WHICH ARE TO BE INCLUDED AS CONDITIONS OF AUTHORISATION;**

Most of the aspects have been highlighted above, but one can emphasize the following:

The Geotechnical Study has emphasized that the services of a structural engineer should be acquired for the designing of the foundation to the appropriate forces that the structure is expected to exert the foundation and in turn on the ground.

**(O) A DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES, AND GAPS IN KNOWLEDGE WHICH RELATE TO THE ASSESSMENT AND MITIGATION MEASURES PROPOSED;**

None at this stage, from the assessment perspective.

**(P) A REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED, AND IF THE OPINION IS THAT IT SHOULD BE AUTHORISED, ANY CONDITIONS THAT SHOULD BE MADE IN RESPECT OF THAT AUTHORISATION;**

In the context and highlight of the significance scoring outlined above, the Bra Cass Service Station and food outlet should not result in impacts and risk to the environment if proper mitigation measures are implemented. The nature of negative impacts being low do not outweigh the potential benefits of the project, provided the mitigation measures are implemented as suggested. The environmental management programme has been drafted and attached to this report which will serve as the guiding document under the supervision of the Environmental Control Officer in ensuring the implementation of the mitigation measures.

As highlighted above, there are no alternative sites that have been identified, assessed and compared with the preferred site. However, our assessment of the preferred site is that the economic benefits to the community of Osizweni, Johnstown, Newcastle far outweighs the impacts that can be mitigated like underground water, soil erosion and so forth. This benefit talks to the jobs, a facility to refresh for motorists which may reduce road accidents. The no-go alternative will offer very little benefit to the local

and broader economy when one reviews the findings of the assessment and of the socio-economic assessment.

Accordingly, it is the opinion of the EAP that there is no significant reason why the project cannot be authorized. It is the EAP's view that this development will far outweigh the impacts imparted by it. The development as such will strive towards the enhancement of the node already zoned by the local municipality for this activity.

The overall development is likely to pass a sustainability test, providing business economic advancement and employment opportunities. It must be noted that the impacts mostly identified like soil erosion, possible impact on ground water / water resources, security and health issues, can be mitigated through strict implementation of the recommendations of Specialists studies and EMPr. The implementation of the mitigation measures outlined throughout this report and the EMPr are likely to provide a setting for the development to take place in a sustainable manner. Our overall analysis is that this activity must be authorized.

Overall, the identified impacts can be mitigated as long as the monitoring function is ongoing during the construction phase. The EMPr will be very crucial during all phases of the project.

**(Q) WHERE THE PROPOSED ACTIVITY DOES NOT INCLUDE OPERATIONAL ASPECTS; THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED, THE DATE ON WHICH THE ACTIVITY WILL BE CONCLUDED, AND THE POST CONSTRUCTION MONITORING REQUIREMENTS FINALISED;**

The environmental authorization in this instance will include operational aspects, and has to be a lifetime requirement. The activity is likely to commence immediately after the environmental authorization is issued, of course if granted by the Department of Economic Development, Tourism and Environmental Affairs, with construction continuing for about 9 months subsequent to commencement.

**(R) AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP IN RELATION TO;**

- (i) the correctness of the information provided in the reports at the time of compilation;
- (ii) The inclusion of comments and inputs from stakeholders and I&APs;
- (iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- (iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and

I,

confirm that the information provided in the report is correct;

The inclusion of comments and inputs from stakeholders and I&APs is correct;

The inclusion of inputs and recommendations from the specialist reports is correct;

Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and

Commissioner of oaths:

Commissioner:

Place:

Date:

**(S) WHERE APPLICABLE, DETAILS OF ANY FINANCIAL PROVISIONS FOR THE REHABILITATION, CLOSURE, AND ONGOING POST DECOMMISSIONING MANAGEMENT OF NEGATIVE ENVIRONMENTAL IMPACTS**

The applicant will set aside funds for landscaping, and eradication of any invader alien plants that may take advantage of the site after earthworks. The latter will be done in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) and related Regulations dated 2014.

**(T) ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY; AND**

There is no specific information that we feel will be required by the competent authority over and above what has been highlighted throughout this report.

**(U) ANY OTHER MATTERS REQUIRED IN TERMS OF SECTION 24 (4)(a) AND (b) OF THE ACT.**

NONE, as all issues relating to organs of state with jurisdiction on site have been covered. Furthermore, all impacts, alternatives, mitigation, option of not implementing an activity, issues of monitoring and assessment thereof have been addressed by this draft Basic Assessment report.

**THE ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT is attached as Appendix F.**