



agriculture & environmental affairs

Department:
Agriculture
& Environmental Affairs
PROVINCE OF KWAZULU-NATAL

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EIA File Reference Number:
NEAS Reference Number:
Waste Management Licence Number:
(if applicable)
Date Received:

DC/
KZN/EIA/

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

Basic Assessment Report

9. The KZN Department of Agriculture & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DC21/0003/2012 (KZN/EIA/0000561/2012)
File reference number (Waste Management Licence):	N/A

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	Terratest (Pty) Ltd		
Physical address:	6 Pin Oak Avenue, Hilton, 3201		
Postal address:	PO Box 794, Hilton		
Postal code:	3245	Cell:	084 831 8225
Telephone:	033 343 6789	Fax:	033 343 6788
E-mail:	halew@terratest.co.za		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Warren Hale	BSc (Hons);	IAIAsa; Environmental Law Association	6 yrs
Magnus van Rooyen Pr.Sci.Nat. (400335/11)	MSc (Environmental Management)	IAIAsa; Environmental Law Association	9 yrs

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
Robert Schapers (Terratest)	BSc (Hons), Pr.Sci.Nat. (400041/12)	Geohydrology	Section E	Geohydrological Assessment for Proposed Petrol Filling Station at

Basic Assessment Report

				Harding, KwaZulu-Natal
G.J. Payne (TGC Engineers)	Pr. Eng., B. Tech (Eng), MSAICE	Geology	Section E	Foundation Investigation for a Proposed Shopping Centre in Harding
R. Sahadew (Aurecon)	B. Tech, MBA	Traffic Engineering	Section E	Traffic Impact Statement for a Proposed Petrol Filling Station in Harding
Thys Blomm (Plankonsult)	B. Arch (T&RP), Pr. Pln (A/073/1985)	Town Planning	Section E	Town Planning Report – Part of Portion 3 of Erf 101 Harding
Graham Muller (Graham Muller Associates)	BA (Hons), MSc (Econ), ACMA	Social & Economic	Section E	Economic Impact Study for a Proposed Fuel Service Station on the corner of Kirk and Hawkins Streets, Harding, KwaZulu-Natal

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

The Proposed New Petroleum Filling Station Development in Harding, KwaZulu-Natal

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

INTRODUCTION

The applicant, Zeranza 311 (Pty) Ltd, is proposing to develop a petroleum filling station on Portion 3 of Erf 101 in the town of Harding, situated in southern KwaZulu-Natal. Mr Wray Burnet Kettle is the landowner. Mr Kettle is in the process of signing a Joint Venture agreement with the applicant to undertake the planned development on his land. The development of the Petroleum Filling Station will bear the brand 'Total' (Total South Africa).

It is to be noted that Zeranza 311 (Pty) Ltd intends to further subdivide Portion 3 of Erf 101 so that the petroleum filling station is accommodated on its own parcel of land. The site of the proposed development will have an area of 3,000 – 3,100m². Subdivision can only occur subsequent to the receipt of a positive Environmental Authorization and a successful Rezoning Application (under the KwaZulu-Natal Planning and Development Act; currently being undertaken by Plankonsult, the project Town Planners).

Zeranza 311 (Pty) Ltd intends to undertake the following activities at the site of the proposed development:

- Develop a petroleum filling station, with ancillary infrastructure:
 - Four posted canopy;
 - Four pump islands in forecourt able to service a maximum of eight vehicles concurrently;
 - Five underground petroleum product storage tanks:
 - Each with a capacity of 23,000 litres (combined storage capacity 115 cubic metres).
 - Double-walled composite tanks.
 - Utilised to store three different of petroleum products (diesel (one tank), Unleaded Petroleum 93 (two tanks) and Unleaded Petroleum 95 (two tanks).
 - Tanks will be ventilated. The four tanks containing unleaded petroleum will be joined by a vent stack manifold with a single stack. The diesel tank will be separately ventilated.
 - Double-walled piping;
 - Filler area with five filler points;
 - Spill containment slabs in the filler area and the forecourt, draining to a separator; and,
 - Site stormwater drainage linking to municipal stormwater drain.
- Develop a convenience store – Layout according to Total's BETA Specification (285m²) and

- fast food outlet (160m²) (an example BETA Shop Layout is provided in **Appendix C**); and,
- Develop access/egress points, and provide a hardened surface and parking facilities.

SITE LOCATION

The proposed petroleum filling station will be developed on Portion 3 of Erf 101, which is situated immediately southwest of the intersection of Hawkins Street and Kirk Street in the town of Harding, Umuziwabantu Local Municipality (KZ214), Ugu District Municipality (DC21), southern KwaZulu-Natal.

Portions 1, 2 and 3 of Erf 101 are adjacent parcels of currently undeveloped/vacant land in Harding that developers have earmarked for development. This rectangular strip of land is bounded by Hancock Street to the west, Livingston Street to the South and Hawkins Street to the East. Subdivisions of the land to the north of the study site, up to the N2, suggest that Kirk Street will be extended in the future to become the northern boundary of the site. (refer to Site Plans in **Appendix A** and Facility Illustrations in **Appendix C**).

A sports complex, consisting of open fields, courts and associated facilities (stands and change rooms), is located adjacent to the eastern side of the proposed development. Commercial properties and an informal parking lot are positioned to the south of the proposed petroleum filling station. A few residential properties are located to the west of the site. The area adjacent to the north boundary of the development is undeveloped.

A new shopping centre is proposed on the vacant land adjacent (Portions 1 and 2 of Erf 101) to the southern periphery of the site.

LAND USE AND LAND-COVER

A land use classification undertaken in 2005 places the study site on the periphery of an area classified as 'residential'. Upon observation, the closest formal residential dwelling was found to be located 150 metres to the southwest of the site.

In Mucina and Rutherford's (2006) classification, the project area falls within the Ngongoni Veld Vegetation Type (SVs 4 – Sub-Escarpment Savanna Bioregion). In terms of vegetation and landscape features, this vegetation type is often associated with rocky slopes and terraces mainly with deciduous trees of short to medium height and large shrubs. *Acacia* species are prevalent. The conservation status of this vegetation unit is considered 'Least Threatened' (refer to Site Plans in **Appendix A**).

From site visits in December 2011 and February 2012, it was established that the site of the proposed development was not found to conform to the description of the Ngongoni Veld Vegetation Type. The vegetation cover is predominantly alien grass species. Patches of ground on site are denuded of all vegetation cover, presumably due to vehicles and people traversing the site.

According to Ezemvelo KwaZulu-Natal Wildlife's (EKZNW) 2008 KZN Province Land-Cover Database, the land-cover for the majority of the site is classified as 'Degraded Grassland'. This is defined as 'grassland that shows a significant loss of tree and/or shrub canopy cover, when compared to surrounding areas of natural bushland'. In the preceding 2005 Land-Cover

Database, this area was classified as 'Natural Grassland'. The 2008 classification of the site is supported by the very low irreplaceability value, assigned to the general area (>0-0.2) in EKZNW's 2007 assessment. The study area is located outside of the Biodiversity Priority Areas and protected areas classified in EKZNW's 2010 Conservation Plan (refer to Site Plans in **Appendix A**).

The degraded nature of the vegetation at the site of the proposed development was confirmed during the visual assessment of the site.

HERITAGE

According to the National Heritage Resources Act No 25 of 1999, provisions are made to protect national heritage and this forms an integral part of the environmental assessment process. It is unknown at this stage what archaeological findings may be found at the proposed development site. AMAFA is KwaZulu-Natal's heritage authority. A Heritage Impact Assessment (HIA) may be conducted, if required, in order to assess the cultural and heritage significance of any findings. This specialist study would be included in the Final Basic Assessment Report.

SOCIO ECONOMIC ASPECTS

The site of the proposed development is situated on the fringe of a residential area. Some of the potential benefits of the proposed development were addressed under Section 4 – Needs and Desirability. The petroleum filling station will provide jobs to local residents. Other petroleum retailers in Harding may object to the proposed development due to perceived loss of revenue.

TRAFFIC

Hawkins Street is a Provincial Main Road (MR 59) that traverses along the eastern periphery of the site while Hancock Street forms the western boundary of the site. Livingstone Street and Kirk Street traverse along the southern and northern peripheries respectively.

A Traffic Impact Statement was prepared for the purposes of this Basic Assessment. With the knowledge that the proposed new shopping centre, adjacent to the southern boundary of the site, would generate a substantial volume of traffic in the immediate vicinity of the proposed petroleum filling station, it was considered prudent to consider the traffic impact of the shopping centre as well in the Traffic Impact Statement. The Traffic Impact Statement Report is available in **Appendix D**.

SURFACE HYDROLOGY

The site is located in the T52K quaternary catchment, which has the Mzimkulwana and Nkondwana Rivers as the main drainage features. The Mzimkulwana originates northwest of Harding and eventually feeds into the Mzimkhulu River near to Port Shepstone on the KwaZulu-Natal coast. The Mzimkulwana River flows from west to east passing around the northern side of Harding, and comes to within 1.1km of the proposed site. Two main tributaries pass through Harding from South to North and join the Mzimkulwana River on the Northern

side of Harding. These tributaries are 1.1km west and 600m east of the site respectively (refer to Site Plans in **Appendix A**).

GEOHYDROLOGY

The regional geohydrology of the area can be broadly described as predominantly argillaceous rock comprising shale, mudstone and siltstone. The principal groundwater occurrence is from an intergranular and fractured aquifer type, with median borehole yields in the expected range of 0.5 to 2.0 litres per second. The regional geohydrology of the area is presented in Figure 3 of the Geohydrological Assessment undertaken as part of this environmental assessment (refer to **Appendix D**).

Median borehole yields in the Vryheid Formation rocks are 0.6l/s. Water strikes are mostly encountered in fractured rock however zones of weathering between sandstone and shale contacts can also yield water. Fractured rock is commonly associated with the intrusion of dolerite in the host rock matrix. Despite the medium to coarse grained sandstone of this formation, strong cementing results in the sandstone having limited to no primary porosity.

Mean Annual Precipitation (MAP) for the T52K catchment is 803mm/A with a regional recharge of 64mm/A. The resulting anticipated recharge for the localised catchment area of the proposed petroleum filling station site is 1.52M m³/annum. Localised recharge may be significantly lower than this figure as urban drainage systems associated with Harding will divert surface runoff to river discharge.

No boreholes were located within one kilometre of the site. The National Groundwater Database (NGDB) reported eight boreholes within approximately 3km of the site and the KZN Groundwater Resource Information Project (GRIP) reported four boreholes. On review, three of the resources are common to both the NGA and Grip datasets.

GEOLOGY

The regional geology of the area comprises grey shale, mudstone and subordinate sandstone of the Eccca Group. The Eccca Group is comprises dark grey shale of the Volksrust Formation, which is underlain by medium grained sandstone, mudstone and grey shale of the Vryheid Formation, which in turn is underlain by dark grey shale of the Pietermaritzburg Formation. The Vryheid Formation is the most extensive formation of the Eccca Group and varies between 300 and 500m in thickness and comprises alternating successions of shale and sandstone. The Eccca Group has been extensively intruded by post Karoo dolerite. Geological mapping indicates any dolerite intrusive dykes or sills to be in excess of 1km of the proposed site. Alluvium is associated with Mzimkulwana River valley floodplain to the north of Harding. The regional geology of the area is presented in Figure 2 of the Geohydrological Assessment (refer to **Appendix D**).

The geohydrological specialist found that based on the geological map and a site walk over, the site itself is underlain by shale of the Eccca Group. Shale weathers to a sandy clay matrix. No dolerite was evident in near proximity to the site.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

The following activity contained in Government Notice R. 544 of the NEMA Regulations, 2010, is being applied for:

13 – “The construction 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 metres.”

Of the developmental activities mentioned in the Project Description above, the construction of facilities and infrastructure for the storage and handling of petroleum products (considered to be a ‘dangerous good’), with a combined capacity of 80-500m³, in the forecourts of the petroleum filling station is a Listed Activity within the Environmental Impact Assessment (EIA) Regulations promulgated under NEMA. The presence of this activity in the proposed development requires an Application for Environmental Authorization, subject to a Basic Assessment Process.

4. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Other than the mandatory no-go alternative, two alternative layouts concerning the location of the underground storage tanks (USTs) were considered in this report:

[A1 – Preferred] The original layout put forward by the applicant placed the five USTs side by side in the forecourt on the eastern side of the site, aligned parallel to Hawkins Street.

[A2] The alternative layout, places the USTs along the southern boundary of the site, where the truck filling area is currently proposed.

Sections B 5 – 15 below should be completed for each alternative.

PLEASE NOTE: With regard to the above, there are two layout alternatives in terms of the placement of the underground storage tanks on site. In both cases Sections B5 – B15 would be identical. Therefore it is considered unnecessary to duplicate the answers to the sections.

5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

	Latitude (S):			Longitude (E):		
Alternative:						
Alternative S1 ¹ (preferred or only site alternative)	30°	34'	16.86"	29°	52'	43.41"
Alternative S2 (if any)	0	€	"	0	€	"
Alternative S3 (if any)	0	€	"	0	€	"

In the case of linear activities:

	Latitude (S):			Longitude (E):		
Alternative:						
Alternative S1 (preferred or only route alternative)						
• Starting point of the activity	0	€	"	0	€	"
• Middle point of the activity	0	€	"	0	€	"
• End point of the activity	0	€	"	0	€	"
Alternative S2 (if any)						
• Starting point of the activity	0	€	"	0	€	"
• Middle point of the activity	0	€	"	0	€	"
• End point of the activity	0	€	"	0	€	"
Alternative S3 (if any)						
• Starting point of the activity	0	€	"	0	€	"
• Middle point of the activity	0	€	"	0	€	"
• End point of the activity	0	€	"	0	€	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 500m along the route for each alternative alignment.

¹ "Alternative S.." refer to site alternatives.

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

3,000 - 3,100m ²
m ²
m ²

Length of the activity:

m
m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

m ²
m ²
m ²

7. SITE ACCESS

Does ready access to the site exist?

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

Describe the type of access road planned:

YES	NO
	m

The existing driveway providing access to the site off the main road, Hawkins Street, will be closed and a new access point will be constructed according to the KZN Department of Transport standards. A second access point will be constructed off Kirk Street extension.

Regarding the abovementioned roads, the Traffic Impact Statement stated the following:

“Hawkins Street is a two way Provincial Road with a single lane in each direction. Hawkins Street forms a direct link between the Harding CBD and the N2 National Road. The road width of Hawkins Street is approximately 8m with no formal sidewalks or shoulders. Several parked vehicles were observed on the soft shoulders on either side of Hawkins Street. A fair volume of pedestrians were observed walking on the verges and roadway of this road. Hawkins Street is a blacktop road that is in an extremely poor condition as it is beleaguered with potholes and ravelling.

Kirk Street is a narrow unsurfaced road with one lane in each direction. It

² “Alternative A..” refer to activity, process, technology or other alternatives.

currently does not service any properties within the study area. The road width is approximately 5.5m and is in a poor condition."

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500; **Refer to Appendix A**
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site; **Refer to Appendix A**
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites; **Refer to Appendix A**
- 8.4. the exact position of each element of the application as well as any other structures on the site; **Refer to Appendix A**
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure; **Refer to Appendix A**
- 8.6. walls and fencing including details of the height and construction material; **Refer to Appendix A**
- 8.7. servitudes indicating the purpose of the servitude; **Refer to Appendix A**
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto): **Refer to Appendix A**
 - rivers, streams, drainage lines or wetlands;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and **Refer to Appendix A**
- 8.10. the positions from where photographs of the site were taken. **Refer to Appendix A**

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable. **Refer to Appendix B**

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies. **Refer to Appendix C.**

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	±R 11 million
What is the expected yearly income that will be generated by or as a result of the activity?	±R 1.2 million
Will the activity contribute to service infrastructure?	YES NO
Is the activity a public amenity?	YES NO
How many new employment opportunities will be created in the development phase of the activity?	±29
What is the expected value of the employment opportunities during the development phase?	±R 5 million
What percentage of this will accrue to previously disadvantaged individuals?	50%
How many permanent new employment opportunities will be created during the operational phase of the activity?	±29
What is the expected current value of the employment opportunities during the first 10 years?	±R3 million
What percentage of this will accrue to previously disadvantaged individuals?	95%

NOTE: Please refer to Section E of this report, where the results of the independent Economic Impact Assessment have been included.

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The need and desirability for the proposed development, as presented in this section, is adapted from information provided by the project Town Planner (Plankonsult Town and Regional Planners):

- Plans are well advanced for the development of a new shopping centre on an adjacent property (Portion 1 and 2 of Erf 101) at a cost of some R82 million;
- The shopping centre will have parking for 400 vehicles and the petroleum filling station will complement the services offered by the new centre;
- For reasons of synergy, it is common practice in the development of modern shopping centres to include provision for a petroleum filling station;
- The proposed petroleum filling station will service drivers that frequent the shopping centre and the broader community in the town of Harding;
- The site is situated on the main road into Harding and on the left side of the road to

cater for homeward bound traffic;

- vi. The existing petroleum filling stations within Harding are perceived to be inadequately servicing the demand for petroleum products with vehicles regularly queuing in the forecourts. There is therefore a perceived need for another petroleum filling station, which would have the desirable effect of reducing the general congestion surrounding filling stations;
- vii. The brand "Total" is not represented in the town; and,
- viii. The owners of land adjoining the site (Simpson and Kettle) intend releasing all the surrounding land for future development for a hotel, offices and other commercial uses. Enquiries have been received from three parties interested in undertaking new developments in the area.
- ix. Should the subdivided land to the northwest of the site ever be developed, the overall development on Erf 101 will be well situated to service such future developments.

Comments from the Local Municipality confirm some of the points raised above regarding the need and desirability for the proposed development. These have been recorded in the Comments and Response Report (**see Appendix E**).

Indicate any benefits that the activity will have for society in general:

1. There will be an increase in employment opportunities.
2. As per above, there is a perceived need and desirability for an additional petroleum filling station in Harding to better service the fuel retail demand. The petroleum filling station will be in close proximity to users and should reduce congestion and waiting times in and around petroleum filling stations.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

1. There will be an increase in employment opportunities.
2. As per above, there is a perceived need and desirability for an additional petroleum filling station in Harding to better service the fuel retail demand. The petroleum filling station will be in close proximity to users and should reduce congestion and waiting times in and around petroleum filling stations.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, as Amended (Act 107 of 1998)	National Department of Environmental Affairs	1998
National Environmental Management: Biodiversity Act, (Act 10 of 2004)	National Department of Environmental Affairs	2004
National Environmental Management: Waste Act (Act 59 of 2008)	National Department of	2008

Basic Assessment Report

	Environmental Affairs	
National Environmental Management Protected Areas Act (Act 57 OF 2003)	Provincial Department of Agriculture Environmental Affairs and Rural Development	2003
Hazardous Substances Act (Act 15 of 1973)	Department of Health	1973
National Heritage Resources Act (Act 25 of 1999)	AMAFA	1999
Conservation of Agricultural Resources Act (Act 43 of 1983)	National Department of Environmental Affairs	1983
Protected Areas Act (Act 57 of 2003)	National Department of Environmental Affairs	2003
National Water Act (Act 36 of 1998)	Department of Water Affairs	1998
KwaZulu-Natal Planning and Development Act (Act 6 of 2008)	Local Municipality	2008
Constitution Act (No 108 of 1996)		1996
Manual for Traffic Impact Studies	Department of Transport	1995
South African Trip Generation Rates	Department of Transport	1995
Requirements Relating to the Hydrogeology prior to the Installation of Underground Storage tanks	Department of Water Affairs	[No Date]
Waste Management Series. Minimum Requirements for Water Monitoring at Waste Management Facilities.	Department of Water Affairs	2005
Waste Management Series. Minimum Requirements for Waste Disposal by Landfill.	Department of Water Affairs	1998
South African Bureau of Standards, SABS 089-3-1999, Third Edition. Code of practise - The petroleum industry, Part 3: The installation of underground storage tanks, pumps/dispensers and pipework at service station and consumer installations.	South African Bureau of Standards	1999

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

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

YES	NO
10m ³	

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

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

Basic Assessment Report

Solid waste generated during the construction phase will be stored in skips on site. These skips will be transported by road (by certified waste contractor) to the local municipal landfill site.

Where will the construction solid waste be disposed of? (provide details of landfill site)

The certified waste contractor will decide as to which landfill site will receive the solid waste. It is likely that the existing municipal landfill will be utilised.

Will the activity produce solid waste during its operational phase?

YES	NO
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If yes, what estimated quantity will be produced per month?

10m ³

How will the solid waste be disposed of? (provide details of landfill site)

Waste generated on site will feed into the Municipal waste stream.

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

Not Applicable.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

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

YES	NO
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If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

YES	NO
-----	----

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

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

YES	NO
-----	----

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

m ³

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

Yes	NO
-----	----

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

YES	NO
-----	----

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

None taken.

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
YES	NO

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

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

Dust and vehicle emissions will be released into the atmosphere during the construction phase. Sources of emissions during the operational phase will include transfer of fuel from tankers to the storage tanks, transfer of fuel from the storage tanks to vehicles and exhaust fumes from vehicles at the petroleum filling station.

Emissions released from the site during the construction and operational phases are considered to be negligible and are expected to be well below the ambient emission standards. Emissions will not be considered further in this environmental assessment.

13.4. Generation of noise

Will the activity generate noise?

YES	NO
YES	NO

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

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

If no, describe the noise in terms of type and level:

Limited noise will be generated by construction vehicles and machinery during construction. There will be noise generated from vehicles utilising the facility during the operational phase.

The amount of noise generated at the site during the construction and operational phases is considered to be negligible, and is not expected to exceed the existing ambient noise levels in the area. Noise will not be considered further in this environmental assessment.

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

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

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

litres	
YES	NO

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

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

15. ENERGY EFFICIENCY

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

Where possible, energy saving light bulbs will be utilised.

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

No alternative energy sources utilised.

SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

Alternative S1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

Alternative S2 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

Basic Assessment Report

Alternative S3 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?

YES	NO
-----	----

If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?		YES	NO
If YES, specify and explain:			
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?		YES	NO
If YES, specify and explain:			
Are any further specialist studies recommended by the specialist?		YES	NO
If YES, specify:			
If YES, is such a report(s) attached in <u>Appendix D</u> ?		YES	NO

Signature of specialist: _____ Date:

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	YES	NO	NO
Dolomite, sinkhole or doline areas	YES	NO	NO
Seasonally wet soils (often close to water bodies)	YES	NO	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	NO
Dispersive soils (soils that dissolve in water)	YES	NO	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	NO
Any other unstable soil or geological feature	YES	NO	NO
An area sensitive to erosion	YES	NO	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities.)

Basic Assessment Report

Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUND COVER

Has a specialist been consulted for the completion of this section?	YES	NO
If YES, please complete the following:		
Name of the specialist:		
Qualification(s) of the specialist:		
Postal address:		
Postal code:		
Telephone:		Cell:
E-mail:		Fax:
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	YES	NO
If YES, specify and explain:		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	YES	NO
If YES, specify and explain:		
Are any further specialist studies recommended by the specialist?	YES	NO
If YES, specify:		
If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	NO

Signature of specialist: _____ Date:

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

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Basic Assessment Report

Land use character			Description
Natural area	YES	NO	<p>At present, there are natural / undeveloped areas to the north, west and south of the site of the proposed development. The area to the south has been approved for the development of a shopping centre. The area to the north and northwest has been subdivided and will possibly be developed into a commercial / light industrial area in time to come.</p> <p>The engineering design of the site will accommodate the containment of accidental spillages. Spillages will be diverted to an onsite separator.</p> <p>In the unlikely event of a loss of containment the natural areas to the north and northwest of the site could be negatively impacted by the daylighting of a plume of hydrocarbon contaminants, which is more likely to move in a lateral rather than a vertical manner. However, if the underground storage tanks are designed and installed according to required SANS standards, it is highly unlikely that a loss of containment will occur.</p> <p>Potential ecological impacts are unlikely to influence the application.</p>
Low density residential	YES	NO	<p>The residential dwelling in closest proximity to the site of the proposed development is located 150m to the southwest. Noise and emission impacts are unlikely to be experienced by the residents because of the distance from the study site and because the land between the proposed petroleum filling station and the residents is the subject of another development.</p> <p>Residents that utilise Hawkins Street may experience a minor traffic impact due to the petroleum filling station as more vehicles are expected to traverse this segment of road. The cumulative traffic impact of the petroleum filling station and the proposed shopping centre could be significant. However, the petroleum filling station's contribution to the cumulative traffic impact is minor.</p> <p>There may be a potential visual and aesthetic impact associated with the petroleum filling station. However, this is</p>

Basic Assessment Report

			<p>considered negligible because the whole of Erf 101 is going to be developed.</p> <p>According to the Local Municipality, there is a high need and desirability for the proposed development due to the levels of congestion at the two existing petroleum filling stations (see Appendix E for a copy of the Local Municipality's comments). The proposed petroleum filling station will positively impact on local residents by servicing the growing demand for petroleum products and reducing congestion in and around fuel retailing businesses.</p>
Medium density residential	YES	NO	
High density residential	YES	NO	
Informal residential	YES	NO	
Retail commercial & warehousing	YES	NO	<p>Commercial retail and warehousing is established to the south of the site of the proposed development near the CBD of the Town, which currently follows the alignment of Murchison Street.</p> <p>Such businesses may experience positive and negative impacts, both of low significance, due to greater vehicular thoroughfare, exposing to more clientele and increasing traffic along the segment of road, respectively.</p>
Light industrial	YES	NO	
Medium industrial	YES	NO	
Heavy industrial	YES	NO	
Power station	YES	NO	
Office/consulting room	YES	NO	<p>No offices or consulting rooms were noted during the site visit, however, it is highly likely that there will be such businesses will be present within a 500m radius of the site, which radius includes a portion of the Town's CBD.</p> <p>These businesses are unlikely to be significantly affected by the proposed development, which may slightly alter the dynamics of traffic flow in the town, as discussed above.</p>
Military or police base/station/compound	YES	NO	<p>There is a police station approximately 400m to the southeast of the site. The proposed development is not expected to result in any impact to the police station.</p>
Spoil heap or slimes dam	YES	NO	
Quarry, sand or borrow pit	YES	NO	
Dam or reservoir	YES	NO	
Hospital/medical centre	YES	NO	

Basic Assessment Report

School/ creche	YES	NO	<p>A school is located 250m east northeast of the site. The proposed development may result in a negligible increase in traffic along Kirk Street, which runs to the south of the school. However, the majority of the traffic impact that the proposed development is likely to have will occur along roads to the south of the site, such as Livingstone Street and Murchison Street. These are formalised, blacktop roads. Kirk Street is an unsurfaced road in poor condition.</p> <p>It is therefore unlikely that the petroleum filling station will impact on the school.</p>
Tertiary education facility	YES	NO	
Church	YES	NO	<p>The 1:50,000 topographic map of the study area shows a church located approximately 400m to the east of the site. The proposed development is unlikely to impact on ecclesiastical institutions.</p>
Old age home	YES	NO	
Sewage treatment plant	YES	NO	
Train station or shunting yard	YES	NO	
Railway line	YES	NO	
Major road (4 lanes or more)	YES	NO	
Airport	YES	NO	
Harbour	YES	NO	
Sport facilities	YES	NO	<p>Sports facilities are located adjacent to the study site, on the eastern side of Hawkins Street (less than 20m from site). The proposed development is unlikely to negatively impact on these facilities.</p> <p>The proposed petroleum filling station is anticipated have a negligible impact on the facilities and the spectators.</p>
Golf course	YES	NO	
Polo fields	YES	NO	
Filling station	YES	NO	<p>An Engen petroleum filling station is located approximately 500m to the south of the site of the proposed development, in the north eastern quadrant at the Murchison Street / Hawkins Street intersection.</p> <p>A partially constructed, unpermitted petroleum filling station is located approximately 350m to the south of the site, along Hawkins Street. The owner of the site failed to obtain the relevant authorizations/permits to operate a petroleum filling station there.</p> <p>The proposed development is may result in a negative economic impact to fuel retailers</p>

Basic Assessment Report

			in close proximity due to increased competition. Engen, and other petroleum retailers in Harding, may object to the proposed development on this basis.
Landfill or waste treatment site	YES	NO	
Plantation	YES	NO	
Agriculture	YES	NO	
River, stream or wetland	YES	NO	<p>There is a wetland 350m to the west of the site of the proposed development. The geohydrological study revealed the groundwater flow from the study site is moving in a north westerly direction.</p> <p>The engineering design of the site will accommodate the containment of accidental spillages. Spillages will be diverted to an onsite separator.</p> <p>In the unlikely event of a loss of containment, it is unlikely that the hydrocarbon contaminants plume will reach the wetland because of the general groundwater flow direction. If the underground storage tanks are designed and installed according to required SANS standards, it is highly unlikely that loss of containment will occur.</p>
Nature conservation area	YES	NO	
Mountain, hill or ridge	YES	NO	
Museum	YES	NO	
Historical building	YES	NO	
Protected Area	YES	NO	
Graveyard	YES	NO	
Archaeological site	YES	NO	
Other land uses (describe)	YES	NO	

6. CULTURAL/ HISTORICAL FEATURES

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

YES	NO
-----	----

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

--

Will any building or structure older than 60 years be affected in any way?

YES	NO
-----	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
-----	----

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
- (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;

Refer to Appendix E

- (b) giving written notice to—
- (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the local and district municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
 - (vii) any other party as required by the competent authority;

Refer to Appendix E

- (c) placing an advertisement in—
- (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

Refer to Appendix E

- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that

- this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
- (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
 - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
 - (iv) where further information on the application can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

Refer to Appendix E.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

Refer to Appendix E.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

Refer to Appendix E.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

Refer to Appendix E.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES NO

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

[Terratest attempted to elicit comments from Ugu District Municipality on various occasions. To date, no response has been forthcoming.]

Has any comment been received from the local municipality?

YES NO

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

1. Proposed Location

Umuziwabantu Municipality, having considered its Town Planning Scheme, has no objection to the proposed development in Lot 101. The proposed site is the portion of the plot which was rezoned by the municipality into a commercial zone, which in the opinion of the municipality will have to be rezoned appropriately.

2. Strategic Environment Assessment (SEA)

The municipality has just concluded its Strategic Environmental Assessment for its area and there is no indication in the report that this proposed site would not be compatible with the proposed development. However, the municipality will await the EIA report for confirmation of suitability. The study (SEA) is available in the municipal offices and on CD for reference.

3. Proximity to other similar businesses

Currently the town has two petrol stations with the closest one being approximately 400m from the site of the proposed development. This, in the opinion of council, is a perfect distance, we do not anticipate any problem associated with proximity.

4. Need and Desirability

The concept of a shopping centre, to which this proposed development will be part, was presented to council by the developers and was accepted by council as a 'long overdue development'. Already, the congestion of traffic on entrances of the existing two petrol filling garages is a cause of concern to the municipality and any new petrol station will be a big relief.

Other than the general concerns like safety, which the municipality will deal with on the plan approval stage the municipality has no objection to the development of the petrol filling station as proposed.

(Please refer to **Appendix E** for a copy of the original correspondence.)

Basic Assessment Report

Has any comment been received from a traditional authority?

YES NO

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

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES NO

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

Wildlife Society of South Africa (WESSA)

- 1) We trust that being on the periphery of a residential area is not contrary to land use plans.
- 2) We note that a geohydrological study will be done to determine the suitability of the site for the proposed use – this is of interest to WESSA and we would like to receive information in this regard.
- 3) Storm water control which avoids polluting the surrounding environment is also a priority.

Department of Water Affairs

- 1) DWAF's requirements relating to the hydrogeology prior to the installation of Underground Storage Tanks must be addressed.
- 2) Management of general and hazardous waste generated during the construction phase and post construction phase.
- 3) Identification of any environmental sensitive areas and water resources such as wetlands, rivers, groundwater etc. as well as possible pollution impacts and mitigation measures of such water resources.
- 4) Stormwater management plan/system.
- 5) Spill contingency plans.
- 6) Layout plans and design standards.
- 7) Wastewater and sewage management.
- 8) Environmental Management Programme.

Nelson Mbuthuma – Owner of Incomplete Petroleum Filling Station

- 1) Objection submitted.

Wray Kettle – Landowner of Site of Proposed Development

- 1) Consent provided.

Engen Petroleum Limited, and Bates Delta, situated at 11 Murchison Street, Harding – Parent Company and Existing Petroleum Filling Station Owner respectively

- 1) Objection submitted.
- 2) Disputed the need and desirability of an additional petroleum filling station in Harding; particular reference was made to the perceptions upon which the need and desirability was stated.
- 3) Requested that a Socio–Economic Impact Assessment be undertaken to measure the impact of the proposed development.
- 4) Stated that the proposed development would result in a loss of custom affecting the economic viability of the existing petroleum retailers.

Refer to **Appendix E** for the Comments and Response Report.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

- 1) Geohydrological Assessment required.
- 2) Management of general and hazardous waste generated during the construction phase and post construction phase required.
- 3) Identify environmentally sensitive areas and water resources. Explain possible pollution impacts and mitigation measures.
- 4) Stormwater management plan/system required.
- 5) Spill contingency plan required.
- 6) Layout plans and design standards required.
- 7) Wastewater and sewage management to be considered.
- 8) Environmental Management Programme (EMPr) required.
- 9) Rezoning of site required.
- 10) Alignment with Strategic Environment Assessment (SEA).
- 11) Relief of congestion at Harding's other two petroleum filling stations.
- 12) Socio-Economic Impacts of the proposed activity.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

Basic Assessment Report

- 1) A geohydrological assessment of the site was undertaken in accordance with the DWAF (now DWA – Department of Water Affairs) Minimum Standards.
- 2) Management of general and hazardous waste generated during the construction and operational phases is provided for in the EMPr (see Appendix F).
- 3) Environmentally sensitive areas and potential impacts have been addressed in this Basic Assessment Report.
- 4) Stormwater runoff will be diverted off site into the Municipal stormwater drainage system. A stormwater management plan can only be prepared subsequent to the finalisation of the engineering design.
- 5) A spill contingency plan is included in the EMPr (see Appendix F).
- 6) Layout plans and design standards are addressed in the Basic Assessment Report and the Specialist Reports (particularly the Geohydrological Assessment – see Appendix D). Plans and drawings are included in Appendix C.
- 7) Wastewater and sewage management is addressed in the EMPr (see Appendix F).
- 8) An EMPr has been prepared (see Appendix F).
- 9) The applications for rezoning and subdivision will be handled by the Client's appointed Town Planner (Plankonsult).
- 10) It is noted that the proposed development is not in conflict with the SEA.
- 11) It is noted that the proposed development will relieve general congestion at petroleum filling stations in Harding.
- 12) Socio Economic Impacts of the Proposed Development:

The following information is adapted from the Economic Impact Report prepared by Graham Muller Associates (October 2012).

a) Summary of General Impacts:

		Construction Phase		Operational Phase		Total
		Initial Impact	Total Multiplier Impact	Initial Impact	Total Multiplier Impact	Total Multiplier Impact
GDP - rands	Year 1	R2,873,737	R6,550,886	R 32,622,297	R 60,024,880	R 66,575,766
	Year 2			R 36,537,874	R 67,229,524	R 67,229,524
	Year 3			R 40,359,729	R 74,261,720	R 74,261,720
Employment - jobs	Year 1	15.7	31.7	34	74	105.7
	Year 2	0	0	34	74	74
	Year 3	0	0	34	74	74

The table above provides a summary of the economic impact of the proposed fuel service station and convenience store during the first three years of operation, taking into account the contributions of both the construction and operational phases. The columns entitled 'Initial Impact' represent the direct impact (excluding the indirect and induced effects) of the proposed development on Annual GDP.

In terms of the development's contribution to GDP, the multiplier model estimates R66 million will be contributed towards GDP in the first year of operation (and including the construction phase), increasing to R67 million in year 2 and then reaching maturity at R74 million in year 3.

In terms of job creation, the proposed fuel service station and convenience store will create some 105 Full-Time Equivalent (FTE) jobs in year 1 followed by 74 FTE jobs in years 2 and 3.

Employee remuneration, of which a noteworthy proportion would be injected into local households within Harding area, is estimated at roughly R3,3 million in year 1 increasing as the station turnover grows in years 2 and 3. Although year 1 provides a higher contribution to the national economy than the following two years given the injection from the 'once-off' construction phase, the operational phase represents a potentially indefinite yearly contribution to GDP from the service station which will only grow in size with the development of the national economy.

b) Impact on Local Competitors:

Subjective loss estimates by fuel service station owners			Projected loss by GMA	
Fuel Service Station	Volume	Staff retrenchment	Volume	Staff retrenchment
Caltex	250000 l	15 jobs	125000 l	8 jobs
Engen	30000l	4 jobs	50000 l	5 jobs
Coastals	Nil	Nil	5000 l	Nil

The table above reviews the impact that the proposed service station is likely to have upon service stations within an approximate 3km radius.

Columns 2 and 3 in table above reflect the subjective view of the respective service station owners with regard to business loss and anticipated retrenchments. These views were expressed in interviews. The estimates made by the respective service station owners suggest that a total of 280 000 litres of fuel volume per month will be lost to the new station. Considering that the planned fuel volumes at the proposed station are 280 000 litres per month in its first year of operation and some of this demand will come from shopping centre users and N2 national route travellers, which would otherwise not have stopped in Harding these loss estimates by existing fuel service station management must be considered to be over-estimates. The Engen and Caltex are on the main road through Harding linking to the N2 national route and thus will still be more convenient for most users. Both stations stated that less than 1% of customers were N2 national route users. Most clientele were locals. Furthermore, not all the litreage done at the proposed station will be captured from the 3 nearest fuel service stations.

Graham Muller Associates (GMA) provided a more realistic estimation of the expected loss of fuel sale volumes at the existing fuel service stations. These are reflected in columns 4 and 5 in the table above. Based on the sales figures provided by the fuel station owners it is projected that the Caltex will lose 31%, the Engen 11% and the Coastal's Coop- 6% of fuel sales to the new station. This is a combined loss of 19%. This is fairly low and the Caltex who which will be hardest hit will still be able to sell approximately 300 000 litres of fuel per month. As the economy of Harding grows and increased investment occurs (such as the new shopping centres) these losses will be absorbed by increased sales due to economic growth.

Employment losses anticipated by the respective service station owners have also been scaled down by the GMA project team in line with the revised expected loss of fuel sale volumes to more accurately reflect the actual anticipated impact of the development of the proposed service station on employment numbers. It is expected that initially the new filling

station will have a negative impact on existing service stations to the extent that 13 employees may lose their jobs. However as continued economic growth in the municipality and town is expected, these job losses are unlikely to be permanent. Additionally the 13 employees anticipated to be retrenched in the short term need to be balanced against the 34 jobs expected to be created at the new station. A net gain of at least 21 jobs is expected to result from the development of the proposed new Total Oil fuel service station at the intersection of Kirk and Hawkins Streets in Harding.

Proposed Mitigation: It is the view of the study team that none of the foreseeable negative impacts as identified in this study are of such a magnitude as to warrant any mitigation measures.

The Economic Impact Assessment addresses loss of custom and the impact on employment and labour remuneration. The positive economic effects on the GDP and the creation of additional employment opportunities, with the associated cash injection into local households, are desirable and significant impacts which cannot be overlooked. The results of the Economic Impact Assessment suggest that the proposed development will not result in severe economic prejudice to local competitors.

Comments received from the Umuziwabantu Local Municipality establish a need to for proposed development. Referring to the shopping centre development, of which the proposed petroleum filling station development will form part, the Municipality stated that it is a “long overdue development”. Furthermore, the Municipality stated “the congestion of traffic on entrances of the existing two petrol filling garages is a cause of concern to the municipality and any new petrol station will be a big relief”.

The evaluation of the socio-economic impacts in the following section remains unchanged from the Draft Basic Assessment Report that was circulated in June 2012.

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

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Alternative S1 (preferred alternative)

Direct impacts:

No direct impacts were identified during the planning and design phase.

Indirect impacts:

No indirect impacts were identified during the planning and design phase.

Cumulative impacts:

No cumulative impacts were identified during the planning and design phase.

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

No direct impacts were identified during the planning and design phase.

Indirect impacts:

No indirect impacts were identified during the planning and design phase.

Cumulative impacts:

No cumulative impacts were identified during the planning and design phase.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

No impacts have been identified therefore mitigation measures are not required.

b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

No direct impacts were identified during the planning and design phase.

Indirect impacts:

No indirect impacts were identified during the planning and design phase.

Cumulative impacts:

No cumulative impacts were identified during the planning and design phase.

Alternative A2 (if any)

Direct impacts:

No direct impacts were identified during the planning and design phase.

Indirect impacts:

No indirect impacts were identified during the planning and design phase.

Cumulative impacts:

No cumulative impacts were identified during the planning and design phase.

No-go alternative (compulsory)

Direct impacts:

No direct impacts were identified during the planning and design phase.

Indirect impacts:

No indirect impacts were identified during the planning and design phase.

Cumulative impacts:

No cumulative impacts were identified during the planning and design phase.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

No impacts have been identified therefore mitigation measures are not required.

Alternative A2:

No impacts have been identified therefore mitigation measures are not required.

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Alternative S1 (preferred site)

Direct impacts:

1) Soil Erosion:

Soil erosion could potentially occur where ground stripped of vegetation is exposed to rainfall with the resultant washing away of topsoil and/or sub-soils. Cut and fill embankments, if implemented, are also particularly vulnerable to soil erosion, if not subjected to the correct environmental management practices. The negative impact under these circumstances is considered to have a medium significance (local extent, medium intensity, long term duration and probable).

However, in the presence of the correct mitigation measures and considering the results and recommendations of the specialist studies, the significance of the impact is reduced to low significance (local extent, low intensity, long term duration and probable).

2) Traffic Impacts:

The construction phase is likely to generate additional traffic in terms of construction vehicles and heavy vehicles delivering materials to the site. The additional traffic generated is likely to be well within the capacity of the existing road network. The significance of this negative impact is considered to be very low (local extent, low intensity, short-term duration and definite).

3) Economic Impacts

Positive economic impacts are anticipated during the construction phase of the proposed

Basic Assessment Report

development. The construction phase of the proposed development will provide employment opportunities. The Local Municipality is supportive of development. The land to the north of the study site is subdivided and is likely to be released by the landowner in time to come for development. This petroleum filling station would be well situated to servicing future demand from such development. In this situation, there would be a positive, regional economic impact as developers would consider investing in Harding.

The construction phase employment opportunities generated by the proposed development are considered a positive economic impact of low significance (regional extent, medium intensity, short-term duration and probable).

Indirect impacts:

No indirect impacts were identified during the construction phase.

Cumulative impacts:

No cumulative impacts were identified during the construction phase.

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

The said impacts will not eventuate.

Indirect impacts:

No indirect impacts were identified during the construction phase.

Cumulative impacts:

No cumulative impacts were identified during the construction phase.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

Relevant recommendations from the geohydrological investigation report must be implemented

- The underground storage tanks must be designed and installed in accordance with the SABS Standards (*South African Bureau of Standards, SABS 089-3-1999, Third Edition. Code of practise - 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
- For the underground storage tanks to be constructed in the planned location,
- It is recommended that the monitoring piezometers around the underground storage tanks be designed with the capacity to act as scavenger wells to recover lost product in the event

<p>of a valve leakage.</p> <ul style="list-style-type: none"> An interceptor drain system is to be installed along the base of any fill platform, if applicable, to intercept and collect potentially polluted surface water runoff from the forecourt. This drain should feed through an oil/water separator at the lowest point of the site (i.e. the northern boundary) so that any product can be recovered and disposed of in a suitable manner. <p>Relevant recommendations from the geotechnical investigation must be implemented (specifically relating to founding and establishment of site drainage):</p> <ul style="list-style-type: none"> Where applicable, cut and fill embankments in the residual clays and soft rock may be laid back to a slope batter of about 1:1.5 (33°). All batters must be vegetated as soon as practicably possible after construction. Prior to the placement of any fills, the natural ground must be stripped of all vegetation. Compaction of the sandy clay residuum or weathered shale should be undertaken in 200mm loose thickness layers compacted to no more than 90% of Mod. AASHTO dry density and at optimum moisture content. Soils must not be over compacted as this will lead to heave. It is recommended that a conservancy tank system be implemented and effluent removed regularly by vacuum tanker to a municipal sewage treatment facility. On-site effluent disposal by subsoil percolation is not feasible due to the clayey nature of the subsoils and the shallow rock. Recommendations in the Geotechnical Report relating to stormwater collection from the roofs and impervious surfaces are subject to recommendations from the Geohydrological Investigation Report and relevant standards applicable to the management of runoff from petroleum filling stations. 	
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b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

<p>Direct impacts:</p> <p>No direct impacts were identified during the construction phase.</p> <p>Indirect impacts:</p> <p>No indirect impacts were identified during the construction phase.</p> <p>Cumulative impacts:</p> <p>No cumulative impacts were identified during the construction phase.</p>

Alternative A2

<p>Direct impacts:</p> <p>No direct impacts were identified during the construction phase.</p>

Indirect impacts:

No indirect impacts were identified during the construction phase.

Cumulative impacts:

No cumulative impacts were identified during the construction phase.

No-go alternative (compulsory)

Direct impacts:

No direct impacts were identified during the construction phase.

Indirect impacts:

No indirect impacts were identified during the construction phase.

Cumulative impacts:

No cumulative impacts were identified during the construction phase.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

Alternative A2:

Applicable recommendations from the geotechnical investigation must be implemented (specifically relating to founding and establishment of site drainage).	Applicable recommendations from the geotechnical investigation must be implemented (specifically relating to founding and establishment of site drainage).
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2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

1) Groundwater contamination:

In the absence of the correct design standards, groundwater contamination could potentially arise during the operational phase of the proposed development. One mechanism through which contamination could occur could be as a result of the establishment of seasonal perched groundwater conditions. Such an occurrence could render the submerged petroleum storage tanks buoyant, and could result in a rupture to the underground storage tank (UST) or the connecting ancillary infrastructure.

Unmitigated, the potential impact on groundwater aquifers would have a negative impact of very high significance (regional extent, high intensity, long-term duration and probable). However, if the underground storage tanks are designed and installed in accordance with the SABS Standards, and, if the findings and recommendations of the geotechnical investigation and the geohydrological investigation are adequately incorporated into the engineering design of the proposed development, the potential of UST rupture becomes highly unlikely. SABS Standards make provision for the anchoring of USTs to prevent tank buoyancy. Therefore, the potential impact under these conditions is expected to be of very low significance (local

extent, low intensity, long-term duration and possible).

When petroleum filling stations are designed and installed according to the correct standards, groundwater contamination concerns are more focused on potential leaks from pipe fittings/valves and spillages which may occur from time to time, during the transfer petroleum products to the underground storage tanks, and to a lesser extent, during the filling of motor vehicles. By implementing the recommended mitigation measures, the potential groundwater impact associated with the proposed development will have a low significance (local extent, low intensity, long-term duration and probable).

It is to be noted that a risk assessment was undertaken as part of the geohydrological assessment. Utilizing the available data, the aquifer vulnerability and strategic value were assessed at a desktop level. Aquifer strategic value was found to be 'low' and the aquifer vulnerability was considered to be 'low to medium'.

2) Traffic impact:

The Traffic Impact Statement found the following:

- The petroleum filling station is expected to generate 27 vehicles per hour and 22 vehicles per hour two way traffic in the AM and PM peak hours respectively.
- These generated traffic volumes will have a negligible impact on the existing levels of service on the road network within the study area and no road improvements are required as a direct result of the proposed petroleum filling station.
- The specialist that recommended that from a traffic perspective, the proposed petroleum filling station located at the intersection of Kirk Street and Hawkins Street be approved.

Based on the findings recorded in the Traffic Impact Statement, the negative traffic impact of the proposed development on the existing road network is considered to be of low significance (Local extent, low intensity, long-term duration and probable).

3) Stormwater impacts:

Increased coverage of paved/hardened surfaces may increase the volume and velocity of stormwater runoff. Unmitigated this could have significant environmental implications in the form of erosion and removal of vegetative cover. This would result in a negative impact of medium significance (Local extent, medium intensity, long-term duration and probable).

If the recommended mitigation measures regarding the handling of stormwater runoff are implemented, the impact will be reduced to a negative impact of low significance (Local extent, low intensity, long-term duration and probable).

A Stormwater Management Plan will be included in the Environmental Management Programme (EMPr).

4) Socio-economic impact:

Positive and negative socio-economic impacts are anticipated during the operational phase of the proposed development.

Other fuel retailers in the Town of Harding may be economically impacted by the proposed development through the introduction of additional competition. This is considered to be a negative impact of low-medium significance (Local extent, medium intensity, long-term duration and possible).

The operational phase of the proposed development will provide employment opportunities. The Local Municipality is also supportive of development. This proposed development is assisting the Municipality in fulfilling its developmental and job creation mandate. This is considered a positive impact of high significance (Regional extent, medium intensity, long-term duration and probable).

Indirect impacts:

1) Socio-economic impact:

The land to the north of the study site is subdivided and is likely to be released by the landowner in time to come for development. This petroleum filling station would be well situated to servicing future fuel demand from such development. In this situation, there would be a positive economic impact of medium significance as developers would consider investing in Harding (Regional extent, low intensity, long-term duration and probable).

Cumulative impacts:

1) Traffic Impact:

The Traffic Impact Statement found the following:

- The analysis of the existing traffic volumes on the surrounding road network showed that there is generally no major congestion encountered on the road network surrounding the proposed site during existing peak hours. The road network within the study area operates at a good level of service.
- The analysis of the existing traffic volumes plus the shopping centre generated traffic volumes revealed that the Hawkins Street and Murchison Street intersection will encounter severe congestion during the base year peak hours. This intersection needs to be signalised in the base year to alleviate the envisaged congestion. The two other intersections within the study area will operate at acceptable levels of service during the base year.
- In addition, the analysis of the 5-year forecasted traffic volumes plus the shopping centre generated traffic volumes, exhibited that the Hawkins Street and Livingstone Street intersection will encounter increased levels of congestion specifically on the Livingstone Street approaches. This intersection needs to be re-evaluated in the five year horizon and if it meets the signal warrants at that time then it should be signalised.
- A proposed shopping centre is planned for the vacant land adjacent to the proposed petroleum filling station. The generated traffic volume from the shopping centre will impact on the existing levels of service on the immediate road network. As such, road network improvements were recommended in the traffic study for the proposed shopping centre. Once these recommendations are implemented, the combined impact of the proposed shopping centre and petroleum filling station will be negligible.

Based on specialist opinion the unmitigated cumulative impact of the proposed petroleum filling station and the proposed shopping centre on the existing traffic volumes will be negative and of high significance (local extent, high intensity, long-term duration and probable). However, if all recommendations are implemented, the significance of the cumulative impact will be reduced to low (local extent, low intensity, long-term duration and probable).

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

The said impacts will not eventuate.

Indirect impacts:

The said impacts will not eventuate.

Cumulative impacts:

The said impacts will not eventuate.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

Measures suggested in the Geohydrological Investigation Report:

- Routine monitoring, sampling and analysis of the early warning system should be carried out. Quarterly monitoring and bi-annual sampling is recommended.
- Stormwater should be collected from the roofs and impervious surfaces and piped or channelled in surface drains to the point of discharge. The site should be graded to allow rapid surface runoff.
- The petroleum filling station must operate on a conservancy tank system and effluent removed regularly by vacuum tanker to a municipal sewage treatment facility.

Socio Economic:

- Should the proposed development result in the loss of jobs at other petroleum retailers in Harding, Total is to give preference to job applications from these affected forecourt attendants when initially acquiring staff to meet resourcing requirements.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

1) Groundwater Contamination

The two alternative layouts considered address the location of the underground storage tanks (USTs). Here, geohydrological aspects are the only issues of concern.

The preferred alternative places the five USTs side by side in the forecourt on the eastern side of the site, aligned parallel to Hawkins Street. A layout plan showing location of the USTs is provided in **Appendix C**.

A condition associated with the implementation of this layout, stated by the geohydrological specialist, is that the Hawkins Street channel along the east boundary of the site be remediated and upgraded. This is because the surface drainage along the Hawkins Street could be contributing to the perched groundwater conditions on the site, which could encourage tank buoyancy. Designing and constructing drains that adequately handle surface drainage along Hawkins Street should adequately address this.

In 2012, the Umuziwabantu Local Municipality began to construct stormwater drains along the western side of Hawkins Street. Once complete, these drains are expected to adequately remove the potential of groundwater recharge that the existing channel currently presents.

By addressing the Hawkins Street channel and placing the tanks along the eastern boundary of the site, this alternative allows for the greatest attenuation distance from the groundwater expression to the west of the site. For this reason, this Alternative A1 is preferred.

Basic Assessment Report

The potential groundwater impact associated with this layout is considered to be of very low significance (Local extent, low intensity, long term duration and improbable).

While the significance of potential groundwater impacts associated with this alternative (Alternative A1) does not differ substantially from that of Alternative A2, a greater level of precaution is associated with this proposed layout.

Indirect impacts:

No indirect impacts were identified during the operational phase.

Cumulative impacts:

No cumulative impacts were identified during the operational phase.

Alternative A2

Direct impacts:

1) Groundwater Contamination

The two alternative layouts considered address the location of the underground storage tanks (USTs). Here, geohydrological aspects are the only issues of concern.

This alternative places the five USTs side by side along the southern boundary of the site, where the truck filling area is currently proposed. This alternative layout would have been preferred if stormwater drains had not been constructed along the western side of the Hawkins Street channel, as it would have allowed for the greatest attenuation time and distance from the Hawkins Street channel and the groundwater expression west of the site.

The potential groundwater impact associated with this layout is considered to be of very low significance (Local extent, low intensity, long term duration and improbable).

Alternative A1 factors in a greater level of precaution as it places the tanks further from the groundwater expression west of the site, therefore Alternative A2 is not preferred.

Indirect impacts:

No indirect impacts were identified during the operational phase.

Cumulative impacts:

No cumulative impacts were identified during the operational phase.

No-go alternative (compulsory)

Direct impacts:

No-go alternative is nonsensical. Without the implementation of one of the alternatives mentioned above the entire development will not occur.

Indirect impacts:

No indirect impacts were identified during the operational phase.

Cumulative impacts:

No cumulative impacts were identified during the operational phase.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

Alternative A2

Basic Assessment Report

Selecting Alternative A1 as the preferred layout alternative will mitigate potential impacts to the greatest extent.	Selecting Alternative A2 is not the preferred layout alternative because it places the USTs closer to the groundwater expression to the west of the site. .
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2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Alternative S1 (preferred alternative)

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

Alternative S2

<p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>

No-go alternative (compulsory)

<p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

As mentioned in the impacts phase decommissioning and/or closure of the petroleum filling station and/or the underground	
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storage tanks is not anticipated. However, should this be required for any reason, the Department of Water Affairs must be consulted for guidance. The following conditions are generally required by the Department of Water Affairs:

Tank Closure

- A soil and groundwater contamination investigation must be conducted to determine the presence, nature and extent of any contamination. This will provide information as to the current status of the site in terms of the level of contamination, which will ultimately influence the level or type of remediation that needs to be undertaken, if any.
- The soil and groundwater must be analysed for Benzene, Toluene, Ethyl benzene and Xylene (BTEX's) and for lead based fuel, if this was previously stored in the tank.
- Prior to the tanks and associated piping being closed all residue product must be carefully removed for recycling or safe disposal. Safe disposal certificates must be obtained and kept on record as proof.
- A solid inert material must be used for filling the underground storage tank.
- Only clean soil must be used for backfilling purposes.

Stormwater & Wastewater Management

- Water used for flushing the pipes and tanks must be disposed off safely if it is not suitable for disposal via the sewer system. The relevant department at the Local Municipality must be contacted with regard to the discharge of water containing waste to the sewer system.
- The water containing waste generated must pass through an oil/water separator prior to discharge to the municipal sewer system.
- It must be ensured that any water containing waste does not contaminate clean stormwater.

Waste Management

- All solid waste generated from the removal of the tanks must be handled according to the precautionary principle. This implies that waste (including soils, metals and other material) should be treated as hazardous unless proven otherwise.
- All contaminated soil and other material must be disposed of at a permitted landfill site that is authorized to accept such wastes.
- Waste must not be allowed to be stockpiled on site for extensive periods but must be disposed off as generated.
- Any waste material temporarily stockpiled must be adequately protected from the environment to prevent leaching of potentially harmful contaminants.

Spillages

- Any spillages during the decommissioning of the tanks must be reported to this Department and other relevant authorities.

Remediation

- Clean-up or remediation of any contamination must be done in consultation with this Department.

Basic Assessment Report

<p><i>General</i></p> <ul style="list-style-type: none"> A proper sampling protocol must be followed. In terms of Section 19 of the National Water Act, 1998 (Act 36 of 1998) and with regard to contamination and the remediation thereof, the owner of land, a person in control of land or a person who occupies or uses the land on which pollution has occurred, is not absolved from responsibility of any further and/or associated pollution arising from his property. Should there be a risk to downstream users or the environment from this site in the future, the Department would request that further remedial measures be instituted at this site. <p>It must be noted that the National Environmental Management: Waste Act (Act 59 of 2008) was promulgated in 2008.</p> <ul style="list-style-type: none"> Part 2 of Chapter 4 places a general duty on the holder of a waste. Part 8 of Chapter 4 deals with contaminated land. This Section has yet to come into effect. Draft norms and standards for the remediation of contaminated land and soil quality were gazetted in March 2012. 	
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b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:
Indirect impacts:
Cumulative impacts:

Alternative A2

Direct impacts:
Indirect impacts:
Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:
Indirect impacts:
Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1	Alternative A2

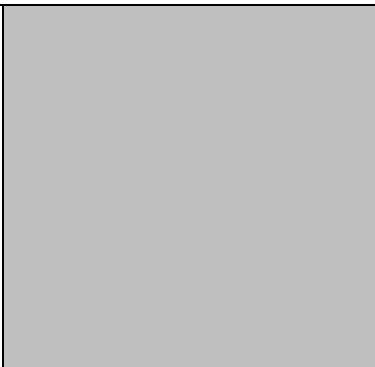
2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1 (preferred site)

Alternative S2

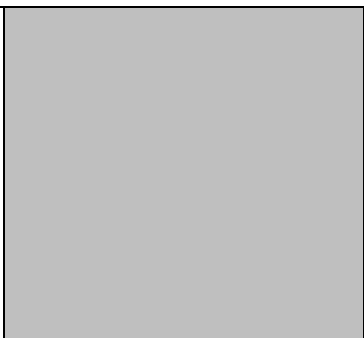
During the construction phase an onsite Environmental Liaison Officer (ELO) must be appointed to conduct the day to day monitoring of environmental issues in accordance with the construction EMPr. The duties of the ELO must be audited on a monthly basis for the duration of the construction phase of the development by an independently appointed Environmental Control Officer (ECO) experienced to conduct such audits. Upon completion of the construction phase, all the environmental management issues will be the responsibility of the maintenance manager of the development with all the liabilities vested with the authorisation holder.



Alternative A1 (preferred alternative)

Alternative A2

During the construction phase an onsite Environmental Liaison Officer (ELO) must be appointed to conduct the day to day monitoring of environmental issues in accordance with the construction EMPr. The duties of the ELO must be audited on a monthly basis for the duration of the construction phase of the development by an independently appointed Environmental Control Officer (ECO) experienced to conduct such audits. Upon completion of the construction phase, all the environmental management issues will be the responsibility of the maintenance manager of the development with all the liabilities vested with the authorisation holder.



3. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative S1 (preferred site)

Other than the potential negative impact to the other fuel retailers in Harding through increased competition, the proposed activity will have no long term negative impacts of medium or high significance on the receiving environment, if the mitigation measures and management of the impacts are undertaken.

The types of impact, duration of impacts and the likelihood of potential impacts actually occurring and the significance of impacts is addressed in the impacts section above and summarised below.

Construction Phase

- 1) **Soil Erosion:** In the presence of the correct mitigation measures and considering the results and recommendations of the specialist studies, the significance of the impact is reduced to low significance (local extent, low intensity, long term duration and probable).
- 2) **Traffic Impacts:** The additional traffic generated is likely to be well within the capacity of the existing road network. The significance of this negative impact is considered to be very low (local extent, low intensity, short-term duration and definite).
- 3) **Economic Impacts:** The construction phase employment opportunities generated by the proposed development are considered a positive economic impact of low significance (regional extent, medium intensity, short-term duration and probable).

Operational Phase

- 1) **Groundwater contamination:**
 - UST rupture/containment failure is considered an unlikely potential impact of very low significance (local extent, low intensity, long-term duration and possible).
 - The potential groundwater impact associated with potential leaks from pipe fittings/valves and spillages, which may occur from time to time during the transfer petroleum products to the underground storage tanks, and to a lesser extent, during the filling of motor vehicles, will have a low significance (local extent, low intensity, long-term duration and probable).
 - Aquifer strategic value was found to be 'low' and the aquifer vulnerability was considered to be 'low to medium' (From Geohydrological Report).
- 2) **Traffic impact:**
 - **Direct Impact:** Based on the findings recorded in the Traffic Impact Statement, the negative traffic impact of the proposed development on the existing road network is considered to be of low significance (Local extent, low intensity, long-term duration and probable).
 - **Cumulative Impact:** If all recommendations are implemented, the significance of the cumulative impact will be reduced to low (local extent, low intensity, long-term duration and probable).
- 3) **Stormwater impact:**
 - If the recommended mitigation measures regarding the handling of stormwater runoff are implemented, the impact will be reduced to a negative impact of low significance (Local extent, low intensity, long-term duration and probable).
- 4) **Socio-economic impact:**
 - The economic impact on other fuel retailers, through the introduction of additional competition, is considered to be a negative impact of low-medium significance (Local extent, medium intensity, long-term duration and possible).
 - Employment opportunities created in the Operational Phase is considered a positive impact of high significance (Regional extent, medium intensity, long-term duration and probable).
 - While there are positive and negative socioeconomic impacts associated with the operational phase of the proposed development, the positive impact would seem to outweigh the negative.

Weighing up the positive and negative impacts assessed, and taking the need and

desirability of the proposed development into account (see correspondence from the Umuziwabantu Local Municipality), the EAP recommends that the proposed development be authorised.

Alternative S2

Alternative A1 (preferred alternative)

Based on the findings of the geohydrological investigation and on specialist opinion, Alternative A1 was considered to be the preferred layout as it allows the greatest attenuation distance from the groundwater expression west of the site.

The potential groundwater impact associated with this layout is considered to be of very low significance (Local extent, low intensity, long term duration and improbable).

While the significance of potential groundwater impacts associated with this alternative (Alternative A1) does not differ substantially from that of Alternative A2, a greater level of precaution is associated with this proposed layout.

Alternative A2

This alternative layout would have been preferred if stormwater drains had not been constructed along the western side of the Hawkins Street channel, as it would have allowed for the greatest attenuation time and distance from the groundwater recharge associated with Hawkins Street channel and the groundwater expression west of the site.

The potential groundwater impact associated with this layout is considered to be of very low significance (Local extent, low intensity, long term duration and improbable).

Alternative A1 factors in a greater level of precaution as it places the tanks further from the groundwater expression west of the site, therefore Alternative A2 is not preferred.

No-go alternative (compulsory)

- *Congestion at the existing petroleum filling stations will persist.*
- *Traffic volumes within the vicinity of the site of the proposed development will not be marginally increased.*
- *Potential impacts to groundwater and surface water resources associated with the proposed development will be removed.*
- *The existing level of competition among fuel retailers will prevail.*
- *Job creation opportunities would be lost.*
- *Future developments to the north of the study site will need to make use of the services of the petroleum retailers located further away, in Murchison Street.*

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report.

YES	NO

Basic Assessment Report

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

GENERAL

Roles and Responsibilities

- An EMPr for site establishment, construction and operational phases must be finalised and approved by DAEARD prior to the contractor moving onto site.
- The Environmental Control Officer (ECO) must be appointed prior to site establishment and construct to prevent contravention of the approved EMPr and Environmental Authorisation.
- An Environmental Liaison Officer (ELO) must inspect the site during the construction phase on a weekly basis.
- The working areas must be clearly demarcated by the ECO prior to commencement of the installation and no access is to be allowed to sensitive areas.
- The ECO is to conduct monthly audits and prepare monthly audit reports. Copies of these reports are to be supplied by the ECO to the developer and DAEARD.
- The ECO's duties extend to the end of the construction phase.
- Total South Africa will be ultimately responsible for the implementation of the Operational EMPr.

DESIGN PHASE

Engineering Design:

- Must accommodate spill containment slabs to assist in the containment of accidental spillages.
- A stormwater management plan must be prepared once the engineering design of the site has been finalised.

CONSTRUCTION PHASE

Noise Pollution:

- During the construction phase, maintain machinery regularly, as per the manufacturer's instructions
- During the construction phase, limit working hours from 07:00 to 17:00 on weekdays, 07:00 to 13:00 on Saturday and no work must be conducted on Sundays.
- Construction employees should be encouraged to not generate noise, which is not essential to construction. In the event of employees being noisy during their lunch breaks it could impact neighbouring properties.

Air Pollution:

- Water spray the construction access road during the dry/windy periods.
- Construction phase stockpiles which have the potential of generating dust must be covered with tarpaulin/plastic sheeting.
- Maintain construction vehicles and machinery to control exhaust emissions.

Water Pollution:

- Construction activities must remain within the footprint of the development.
- Construction machinery must be maintained by a suitably qualified mechanic, at an appropriately lined site, during working hours, so that diesel and/or oil leaks are avoided.
- Prevent run-off by constructing diversion berms and/or placing straw bales on denuded areas.

Erosion measures:

- Should erosion become a problem during the construction phase then diversion berms and drains shall be constructed to divert run-off away from exposed areas.
- During the construction phase, bales can be used as filters across run-off pathways.

Accidental spillages:

- Spills shall be cleared up immediately. The contaminated soils and the spilled material shall be taken to the nearest registered landfill site capable of receiving such spills.
- A register of all incidents shall be kept on site showing measures taken to clear up the spillages.

Basic Assessment Report

Heritage Issues:

- During construction, if heritage findings are made (graves, archaeological objects, etc.), contact AMAFA and stop the works immediately.

Health & Safety:

- Traffic signage shall be erected to advise people of machinery driving in the area.
- Pollution that could be detrimental to humans, flora and fauna shall be prevented as much as possible .
- Construction employees must be restricted to the development area, they must be warned not to trespass on the neighbouring properties.
- Points men must be used at areas where children will be crossing to ensure their safety to school.

Waste Management:

- All solid waste shall be disposed of regularly at an approved registered municipal landfill site.
- Copies of the waybills shall be kept for proof of correct disposal, where possible.
- Should accidental spillages occur, the cleaned up material and the contaminated soil shall be taken to a hazardous registered landfill site.

Construction Site:

- Construction employees must be encouraged to keep within the proposed development site, and not trespass on private property.

OPERATIONAL PHASE

Water pollution

- An operational spill management plan must be compiled by a suitably qualified specialist and implemented.
- Accidental spillages in the filler area and the forecourt are to be contained by allowing to enter the drain at the edge of the spill containment slabs, diverting the spillages to the separator located at a low point on the site.
- A certified contractor must service the separator by removing the spilt product.

Waste Management

- All general solid waste generated at the petroleum filling station during the operational phase must feed into the municipal waste stream.

Stormwater

- A stormwater management system must be implemented and maintained throughout the operational phase of the proposed development.

Health and Safety

- All relevant health and safety requirements under the Occupational Health and Safety Act, as amended (Act 85 of 1993) must be complied with in the operational phase of the development.

Socio Economic

- In the unlikely event that the proposed development results in the loss of jobs at other petroleum retailers in Harding, Total is to give preference to job applications from these affected forecourt attendants when initially acquiring staff to meet resourcing requirements.

Monitoring and Reporting

- Routine monitoring, sampling and analysis of the early warning system should be carried out. Quarterly monitoring and bi-annual sampling is recommended.
- Records of monitoring must be kept and made available to the DAEA on request.
- Monthly stock reconciliations must be taken and recorded. These records must be made available to the Department of Water Affairs on request.
- The leak detectors must be regularly tested and records kept.
- All machinery must be maintained in good working order as to prevent soil or water pollution from oil, fuel or other leaks.

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information