



## Anglo Platinum

### Proposed Diesel Depot – Draft EIA Report

Locality: Mogalakwena Mine

**SHANGONI**  
*Management Services (Pty) Ltd*



# **DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**Anglo American**

**Mogalakwena Platinum Mine**

**Type of project: Scoping & EIA**

**Locality: Mogalakwena Mine**

**Departmental Ref No: 12/1/9/2-W21**

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# PROJECT DETAILS

Limpopo Department of Economic Development, Environment and  
Tourism (LEDET)

Reference No.: 12/1/9/2-W21

Project Title: Proposed Fuel Depot for Mogalakwena Platinum Mine

Project Number: ANG-MOG-16-09-11

Compiled by: Lizette Crous

Date: 25 February 2013

Location: Mogalakwena Mine near Mokopane

Technical Reviewer: Lourens de Villiers



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Signature



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## REFERENCES

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## DEFINITIONS

### Environment

The surroundings (biophysical, social and economic) within which humans exist and that are made up of

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

### Environmental Aspects

Elements of an organization's activities, products or services that can interact with the environment.

### Environmental Degradation

Refers to pollution, disturbance, resource depletion, loss of biodiversity, and other kinds of environmental damage; usually refers to damage occurring accidentally or intentionally as a result of human activities.

### Environmental Impacts

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

### Environmental Impact Assessment

A study of the environmental consequences of a proposed course of action.

### Environmental Impact Report

A report assessing the potential significant impacts as identified during the environmental impact assessment.

### Environmental impact

An environmental change caused by some human act.

### Land use

The various ways in which land may be employed or occupied. Planners compile, classify, study



and analyse land use data for many purposes, including the identification of trends, the forecasting of space and infrastructure requirements, the provision of adequate land area for necessary types of land use, and the development or revision of comprehensive plans and land use regulations.

## **Public Participation Process**

A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a proposed project, programme or development.

## **Topography**

Topography, a term in geography, refers to the "lay of the land" or the physio-geographic characteristics of land in terms of elevation, slope and orientation.

## **Vegetation**

All of the plants growing in and characterizing a specific area or region; the combination of different plant communities found there.

## **Waste**

Waste is unwanted or undesired material left over after the completion of a process. "Waste" is a human concept: in natural processes there is no waste, only inert end products.



## ABBREVIATIONS

<b>BID</b>	– Background Information Document
<b>CRR</b>	– Comments Response Report
<b>LEDET</b>	– Limpopo Department of Economic Development, Environment and Tourism,
<b>DWA</b>	– Department of Water Affairs
<b>EAP</b>	– Environmental Assessment Practitioner
<b>ECA</b>	– Environmental Conservation Act of 1989
<b>EIA</b>	– Environmental Impact Assessment
<b>EIR</b>	– Environmental Impact Report
<b>EMF</b>	– Environmental Management Framework
<b>EMP</b>	– Environmental Management Programme
<b>GN</b>	– Government Notice
<b>I&amp;AP</b>	– Interested and Affected Party
<b>IDP</b>	– Integrated Development Plan
<b>NEMA</b>	– National Environmental Management Act, Act 107 of 1998 as amended
<b>R</b>	– Regulation
<b>S&amp;EIR</b>	– Scoping and Environmental Impact Reporting



## EXECUTIVE SUMMARY

The applicant, Anglo Platinum Rustenburg Mine: Mogalakwena Section, needs to enlarge their fuel storage facility (dangerous goods storage) and maintenance area as the current temporary storage facility is no longer sufficient. To be able to upgrade the aboveground storage facility a full Scoping and EIA process must be undertaken in term of GN R545 of the EIA Regulations of 18 June 2010.

The proposed permanent fuel storage facility triggers the following listed activity under the EIA Regulations of 18 June 2010, Government Notice R.545 (Listing Notice 2):

Activity Number 3: *“The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres”.*

The purpose of this document is to supply the Limpopo Department of Economic Development, Environment and Tourism (LEDET) with the requested information pertaining to the National Environmental Management Act (NEMA), as amended, and Regulation 28 of the Environmental Impact Assessment Regulations, 2010.

Contained in this document is a description of the proposed activity and site specific information pertaining to the Anglo Platinum Rustenburg Mine: Mogalakwena Section Diesel Depot project (location, topography, surrounds, vegetation, etc.) as well as the possible impacts that may arise as a result of the proposed depot. A draft Environmental Management Programme (EMPr) also forms part of this document.

The document is divided into 6 sections as set out below:

1. Introduction
2. Nature and Extent of the Environmental affected by the activity
3. Legislation and Guidelines applicable
4. Description of Potential Environmental Impacts
5. Public Participation Process
6. Need and Desirability for the activity
7. Identified Alternatives
8. Comments obtained during the public participation phase
9. Public Meetings
10. Landowner consent
11. EAP’s responses to comments received
12. Environmental Impact Assessment process
13. Environmental Impact Statement



#### 14. Conclusion and recommendation

The main issues or concerns related to this project are summarised below:

- Groundwater pollution;
- Soil pollution;
- Safety hazards;
- Fire hazard; and
- Personnel safety.





# 1. INTRODUCTION

Mogalakwena Platinum Mine is part of the Anglo American Group. The mine is located approximately 30km north-west of the town of Mokopane (formerly Potgietersrus). The mining right covers a total area of 137km<sup>2</sup>.

The mine's current infrastructure consists of four open pits namely:

- Sandsloot;
- Zwartfontein (pit near which the project site is located);
- Mogalakwena Central; and
- Mogalakwena North.

The mining method is opencast mining with a current depth that varies between 90 and 240 metres. The life of mine extends beyond the year 2060 and the current LoM plan consist of an ore reserve of approximately 67.74 E million ounces as well as mineral resources of 195 E million ounces.

## 1.1 Applicant

<b>Name of Applicant</b>	Anglo American Mogalakwena Platinum Mine
<b>Postal Address</b>	P/Bag X 2463, Mokopane, 0600
<b>Telephone No.</b>	015 - 418 2518
<b>Fax No.</b>	015 - 418 2018
<b>Farm name and portion on which the activities take place</b>	Mogalakwena Mine, Sandsloot, 236 KR
<b>Co-ordinates of operation</b>	23°59'47.17"S; 28°55'21.48"E

## 1.2 Appointed Environmental Assessment Practitioner

<b>Name of firm</b>	Shangoni Management Services (Pty) Ltd.
<b>Postal address</b>	PO Box 74726 Lynwood Ridge Pretoria 0040
<b>Telephone No.</b>	012 807 7036
<b>Fax</b>	012 807 1014/086 643 5360

<b>E-mail</b>	lizette@shangoni.co.za	
<b>Team of Environmental Assessment Practitioners on project</b>		
<b>Name</b>	<b>Qualifications</b>	<b>Responsibility</b>
Mr. H.L. de Villiers	Bsc. (Hons) (PU for CHE) MSc.(UP)	EIA Project Leader and Co-ordinator
Ms. Lizette Crous	Post-Graduate Certificate – Environmental Movement	EAP

Detailed CV's for the project team are appended (Appendix F).

### 1.3 Current situation of the current storage facility

Mogalakwena received an environmental authorisation (Record of Decision) in 2008 for a temporary storage facility that included the following:

- 6 x 14 000L vertical tanks for lubricants;
- 8 x 83 000L horizontal tanks for diesel; and
- 1 x 23 000L underground tank for petrol.

The authorisation was valid for a period of 5 years, but the facility was never developed. For this reason, the mine has requested an amendment to the ROD to move the facility not far from the original site. The following was applied for and approved in 2011:

- 12 x 1 000L vertical tanks for assorted lubricants;
- 1 x 1 000L vertical tank for anti-freeze; and
- 6 x 60 000L fuel tanks (diesel).

### 1.4 Proposed Activity

Mogalakwena would like to establish a permanent diesel depot onsite that will include the following:

- Bulk fuel and oil above-ground storage facility for approximately 232m<sup>3</sup> of diesel;
- A vehicle service facility for heavy mining equipment; and
- A wash bay area.

### 1.5 Design of the proposed facility

The fuel depot's design can be seen in Figure 1 below. The fuel depot entails the following:

- A secondary containment area with four (4) diesel storage tanks, each with a capacity of 58 000L (combined capacity of 232 000L);
- A tank containing OHC 10W oil with a total capacity of 26000L;
- A tank containing OEC 15W40 motor oil with a total capacity of 26000L;
- A tank containing TELLUS 46 oil with a total capacity of 10 000L;



- A tank containing ODT 30 oil with a total capacity of 10 000L;
- Transfer pumps;
- A wash bay;
- A bulk loading and offloading area;
- An interceptor separator for the recovery of oil;
- Service bay area 1. This will be the field service bay;
- Service bay area 2;
- The services workshop will have an APEX top roof structure and a lower steel roof structure, with U/S IBR cladding. A spoon drain will be installed that will lead to the sand trap; and
- A green building with a store area.



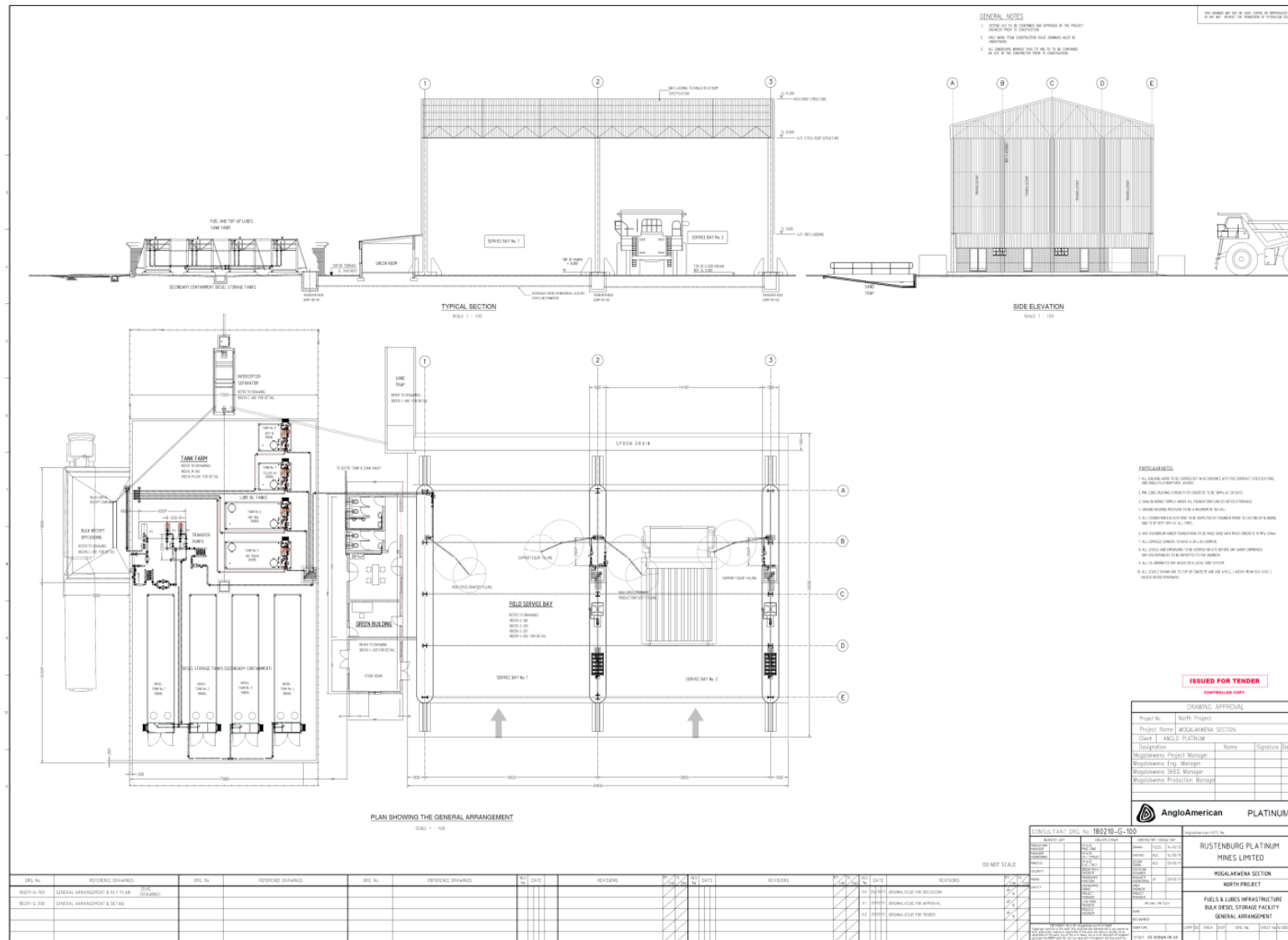


Figure 1: Design of the permanent storage facility



## 1.6 Proposed Locality

The preferred site for the proposed fuel depot is the current temporary storage facility, located on Portion 0 of the farm Swartfontein 818 LP, with coordinates 23°57'52.91"S; 28°52'57.25"E. The alternative site is also located on Portion 0 of the farm Swartfontein 818 LP with coordinates 23°57'54.69"S; 28°53'1.86"E. Both sites are in the vicinity of the Zwartfontein open cast pit.

The sites are located approximately 25km north-west of the centre of Mokopane within the Mogalakwena mine.

The mine falls within the Limpopo Catchment area, with the Groot Sandsloot River flowing through the mine, the Rooisloot River flowing south-east of the mine and the Mogalakwena River flowing south-west of the mine.

The investigated site is situated within the mine area. The area is relatively flat and is situated approximately 1 100 metres above mean sea level. The sites are already disturbed and the vegetation was removed many years ago.





Figure 2: Locality

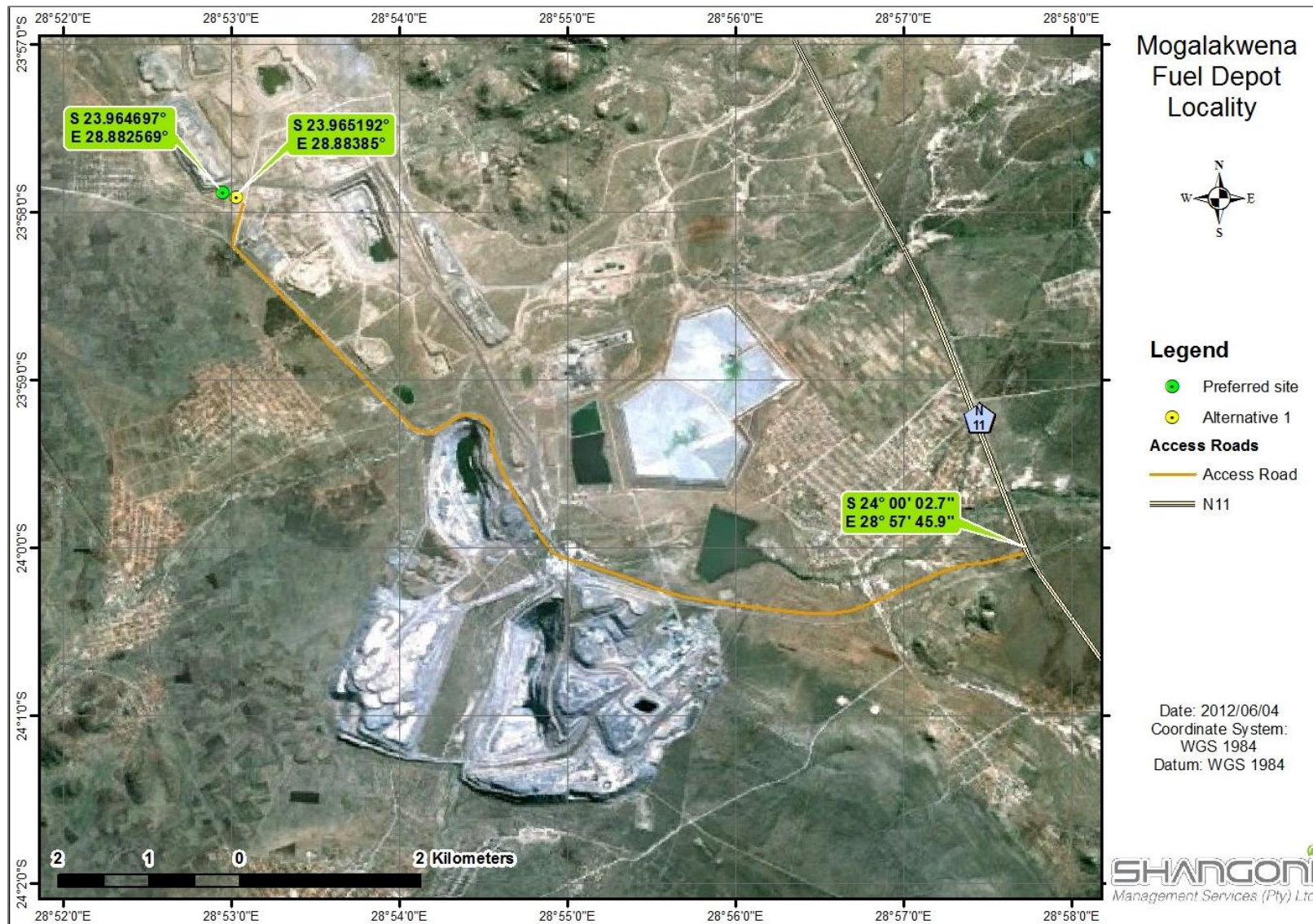


Figure 3: Locality of the preferred and alternative site

*Table 1: Direction and distance to the nearest town*

<b>Direction</b>	<b>Distance from site</b>	<b>Closest town</b>
South-west	25km	Mokopane (Potgietersrus)
North	60km	Steilloop
South-West	20km	Mahwelereng

The site locality map is given below as in Appendix D. The topography of the site is shown in Appendix D, and the site photographs are shown below.





## 2. NATURE AND EXTENT OF THE ENVIRONMENT AFFECTED

### 2.1 Biophysical aspects affected

The proposed area for the aboveground storage and maintenance facility is within the existing mining area. The site was cleared of all vegetation many years ago and there is no indication of any sensitive areas or natural vegetation existing on site. The preferred alternative is where the temporary diesel storage facility is currently situated (shown in Figure 4 and 5 below).



Figure 4: Location of site photos of the preferred site





Figure 5: Photos of the preferred site



Figure 6: Location of site photos of the alternative site



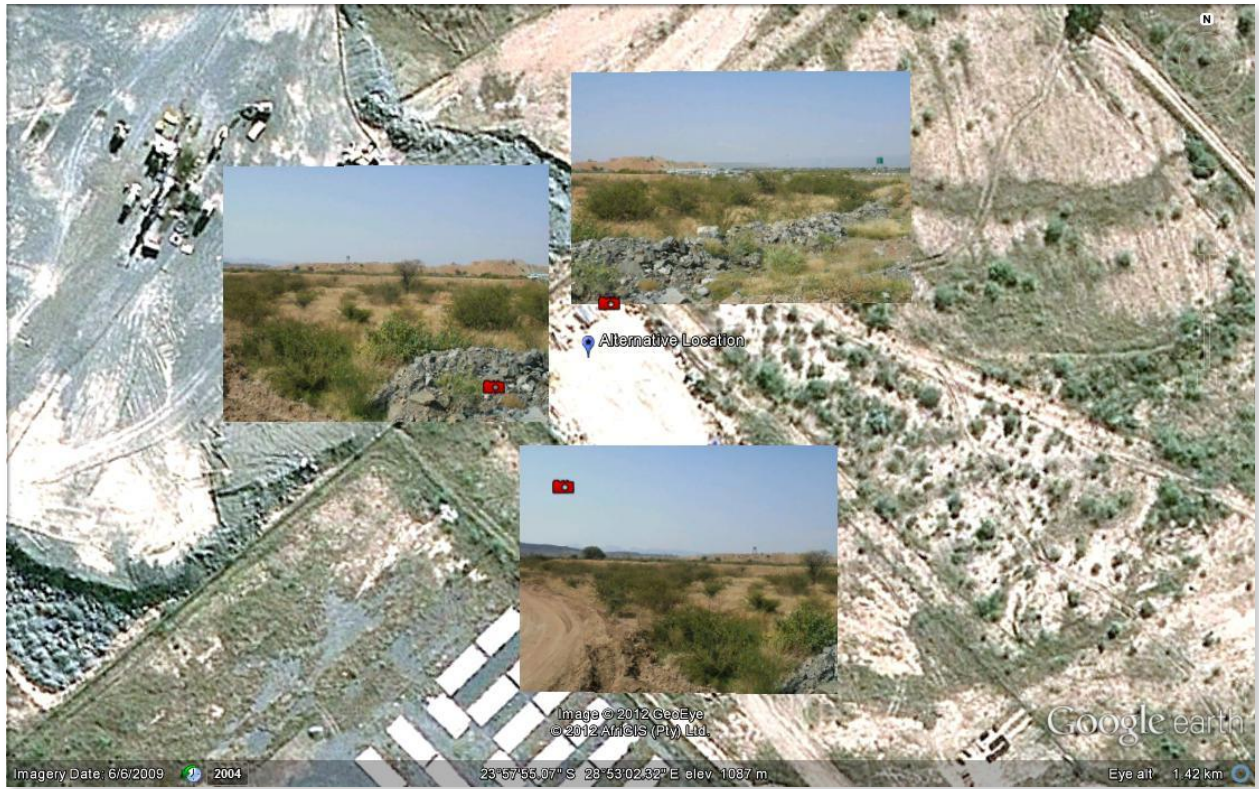


Figure 7: Photos of the alternative site



Figure 8: Preferred location for permanent facility (1)





Figure 9: Preferred location for permanent facility (2)



Figure 10: Preferred location for permanent facility (3)





Figure 11: Preferred location for permanent facility (4)



Figure 12: Alternative site (1)





Figure 13: Alternative site (2)



Figure 14: Alternative site (3)

The following table summarises the environment in general:



Table 2: Environmental features of the area (SRK, 1998, ENPAT, 2000, AGIS, [http://www.agis.agric.za/agismap\\_atlas](http://www.agis.agric.za/agismap_atlas), Musina & Rutherford, 2006)

Environmental Feature	Description
Geology	Lebowa, Meinhardskraal & Transvaal
Terrain Type	Plains with low hills
Slope	20m
Morphological units	Lowlands with mountains
Primary Catchment	A
Secondary Catchment	A6
Tertiary Catchment	A6G
Rivers	Groot Sandsloot draining into the Mogalakwena River
Soils	PT2, red, yellow and or greyish soils with a high base status
Water Holding Capacity of Soils	21 – 40mm
Land Type	Ah
Land Use	Mining / subsistence farming
Vegetation Type	Makhado Sweet Bushveld

## 2.2 Geology

The area is made up of structures of the Bushveld complex of which the Platreef, or local equivalent of the Merensky Reef, forms the floor of the Complex. This basal contact has an overlapping or transgressive relationship with the underlying sedimentary units of the Transvaal Supergroup.

The Platreef strikes or trends generally to the north-west and dips or is inclined to the south-west at an average of 40 degrees. There are a number of north east trending dykes cutting through the Platreef horizon, typically of Pilanesberg Age. Several major east-west striking faults interrupt the strike of the Platreef and minor strike faults have been identified.

Over the northern part of the deposit, from approximately the southern end of the Zwartfontein North Section, there is a wedge of Transvaal Supergroup rocks occurring between the Bushveld Complex and the granite. The lowest member of the Transvaal rocks, comprising the Malmani Subgroup which, in this area, consists of dolomite, meta-dolomite and calc-silicate.

The hangingwall of the reef consists of norites, and these are reported to be unmineralised. In the footwall dolomite there is a 100-200m thick zone that contains scattered mineralisation that may be mined in future. Mineralisation within the oxidised zone that could give rise to problems of acid mine drainage are pyrrhotite, pyrite, chalcopyrite and pentlandite (SRK, 1996).



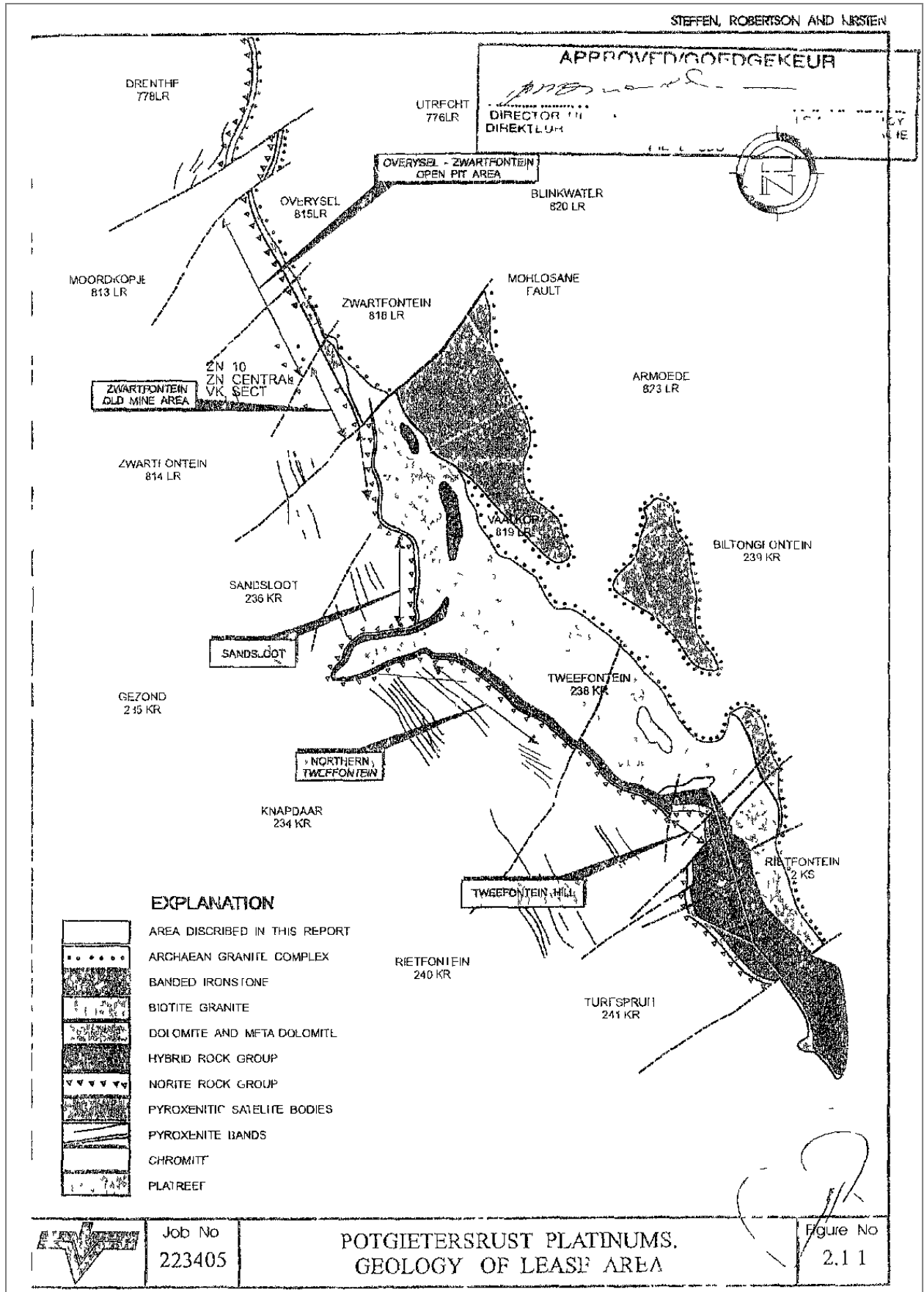


Figure 15: Geology of the mining area



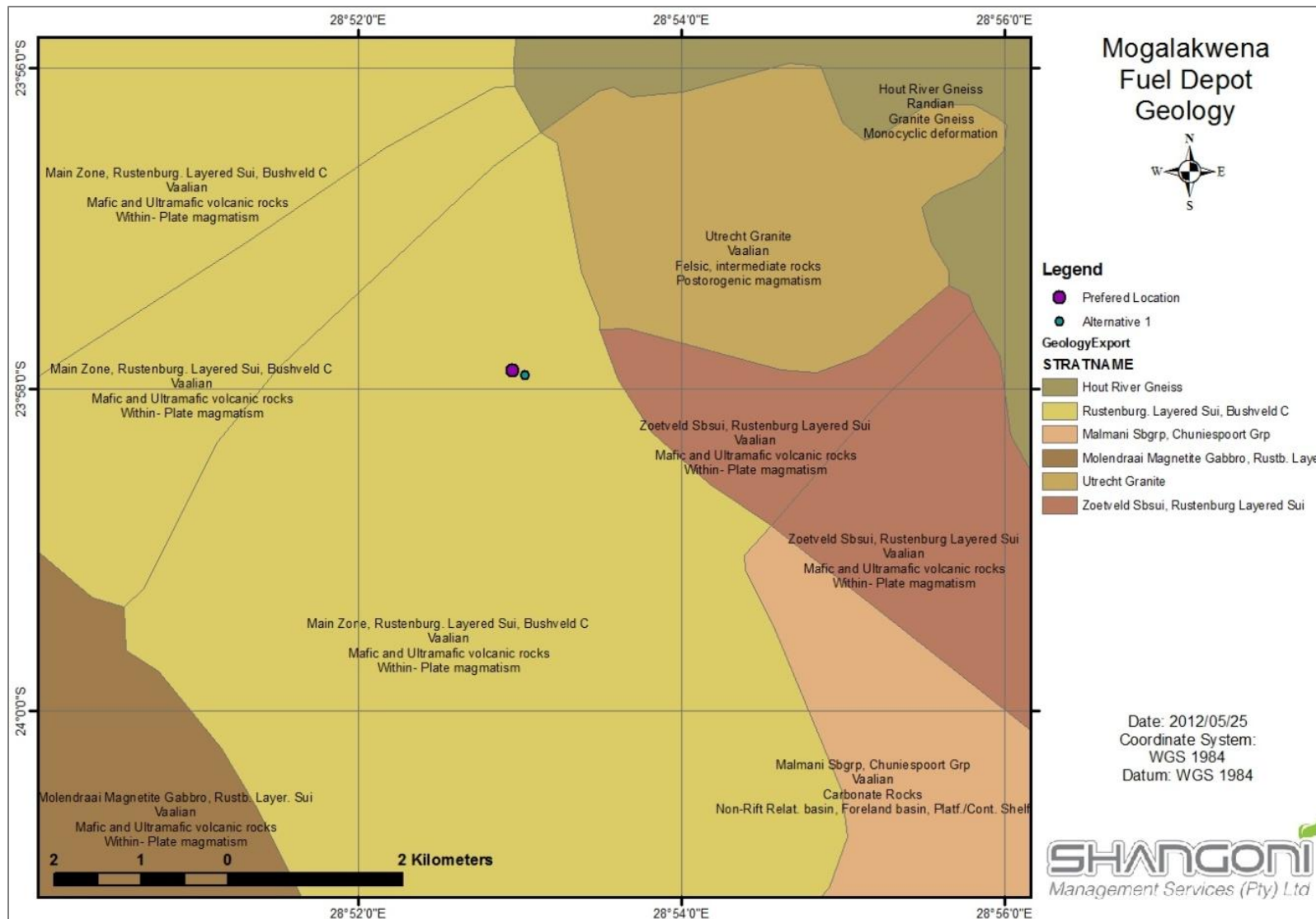


Figure 16: Geology of the site

## 2.3 Regional climate

The site falls within the Northern Transvaal Climatic Zone as defined by Schulze (1974), where the average rainfall generally varies from 380 – 700mm per year. Precipitation usually occurs during the summer months from November to March, with most rainfall occurring during January. Most of the precipitation falls during short duration rainfall events and especially thunderstorms. The storms mainly occur during the late afternoons and early evenings.

### 2.3.1 Rainfall

The area falls within the summer rainfall region with a mean annual rainfall of approximately 700mm. Most of the rain falls in the months of November, December and January.

Table 3: Monthly and annual Rainfall (SRK, 1996)

Month	Rainfall (mm)	Raindays
January	123	12
February	90	9
March	68	8
April	37	6
May	11	3
June	6	2
July	2	1
August	5	2
September	19	2
October	45	6
November	96	11
December	107	12
<b>Total</b>	<b>609</b>	

### 2.3.2 Evaporation

The mean monthly evaporation was determined by using data from an “A” pan for January (191mm) to July (87 mm) and the corresponding data from a Symous Pan, where the mean monthly evaporation rate varies between 90mm in July and 190mm in January. The mean monthly evaporation rate of a body of water such as a lake or a dam is 1600mm (SRK, 1997).

Table 4: Evaporation rates (SRK, 1997)

Month	A-pan Evaporation (mm)
January	191
February	159
March	154
April	118
May	99
June	80
July	87
August	122
September	161
October	193
November	179
December	195

### 2.3.3 Temperature

Mean monthly maximum and minimum temperatures as supplied by the South African Weather Bureau for a period of 28 years are given in the table below.

Table 5: Temperatures (SRK, 1997)

Month	Temperatures		
	Mean	Maximum	Minimum
January	22.8	29.0	16.5
February	22.4	28.2	16.3
March	20.7	27.4	14.1
April	18.0	25.9	10.2
May	14.6	24.2	5.1
June	11.1	21.3	0.4
July	11.2	21.8	0.6
August	14.4	24.3	4.4
September	18.1	27.3	8.9
October	20.3	28.6	12.0
November	22.0	29.1	14.9
December	22.3	28.9	15.7

### 2.3.4 Wind

The average wind speed recorded in the Mokopane (Potgietersrus) area varies between 3.1m/s and 3.9m/s. The dominant wind direction and velocities are set out in the table below:

Table 6: Wind data for the Mokopane area (SRK, 1997)

Month	Dominant Wind Direction	Velocity associated with the dominant directions m/s	Maximum velocity m/s	Direction associated with the maximum velocity
January	N	3.4	3.6	NE
February	NW	3.4	3.7	NE
March	NW	3.3	3.5	NE
April	NW	3.4	3.7	N
May	NW	3.4	3.4	W-NE
June	NW	3.5	3.8	W
July	NW	3.5	3.8	NE
August	NW	4.0	4.0	W-NE
September	NW	1.3	4.8	N
October	NW	4.2	4.6	N
November	NW	3.9	4.1	N
December	NW	3.6	3.8	N

### 2.3.5 Incidents of extreme weather Conditions

#### Frost

Frost occurrence is unlikely with only an average of 0.3 frost days being recorded annually.



**Hail**

Hail occurs on average two to three days per annum.

**Droughts**

Extended drought periods have rendered farmers and locals more depended on ground water resources.

**2.4 Topography**

The flat areas vary between 1060m and 1160m above mean sea level and are separated by higher koppies and ridges. The site has a gentle slope to the west and a range of granite koppies lie to the east and south of the site. The ground surface is fairly even except for a number of deeply eroded dongas of approximately 2-3m deep. The Groot Sandsloot River is situated to the north of the proposed sites. A prominent dolomite hill named Vaalkop is situated approximately 1.5km south of the existing Sandsloot open pit, while granite hills exist to the north as well as west of the pit beyond the Mohlasane River. Vaalkop has an elevation of 1280 above mean sea level.



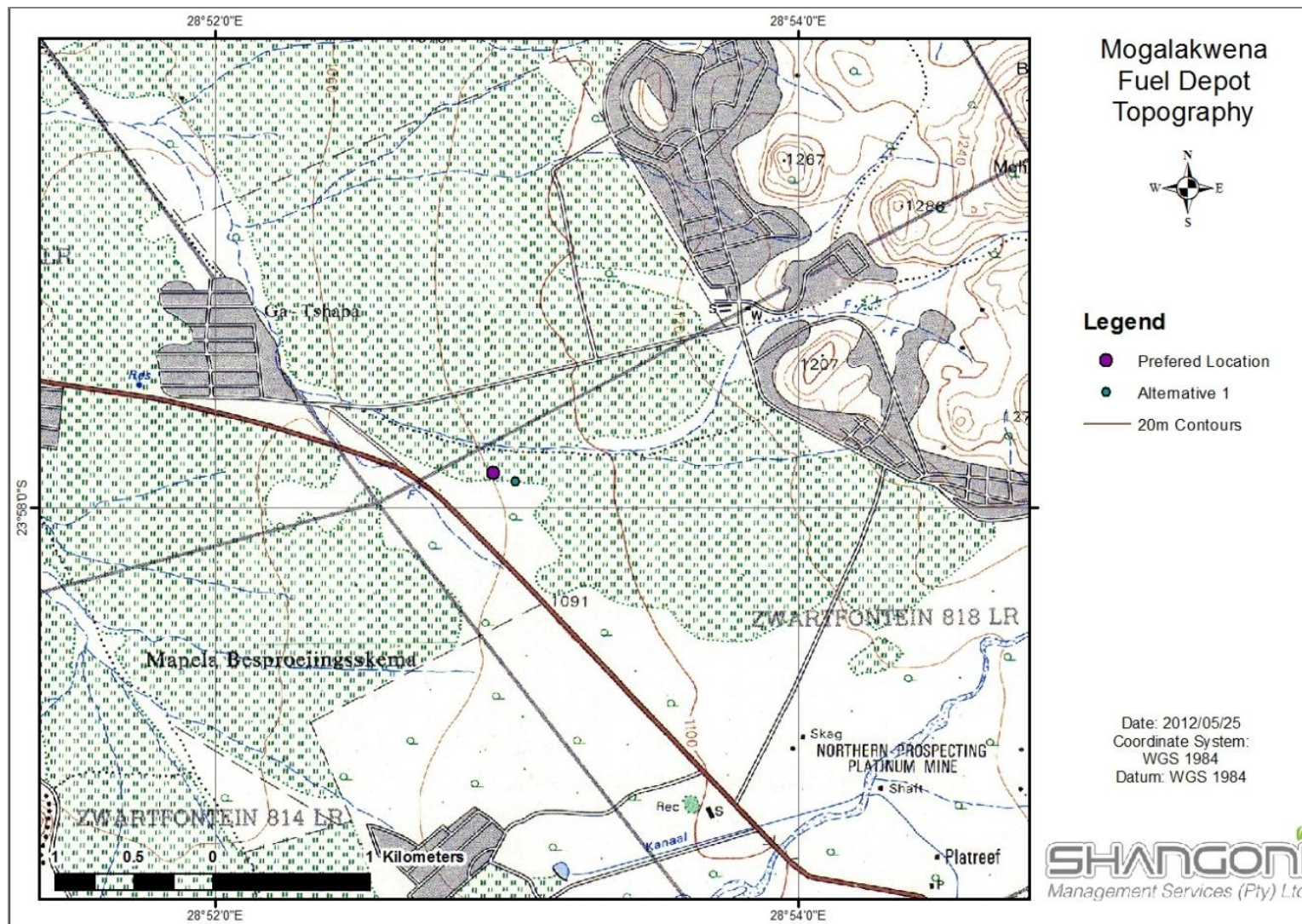


Figure 17: Topography of the area

## 2.5 Soils

As can be seen on Figure 18 the area is characterised by the S13 soil type. This soil type (lithosols) has shallow soils on hard or weathered rock. The soils may receive water runoff from associated rock, but have restricted soil depth and are associated with rockiness.

These eutrophic soils (Figure 19) vary in depth between 450 and 750mm (Figure 20) and have a clay content of between 15 and 35% (Figure 21). The soil present on site has been severely disturbed by the mining activities.



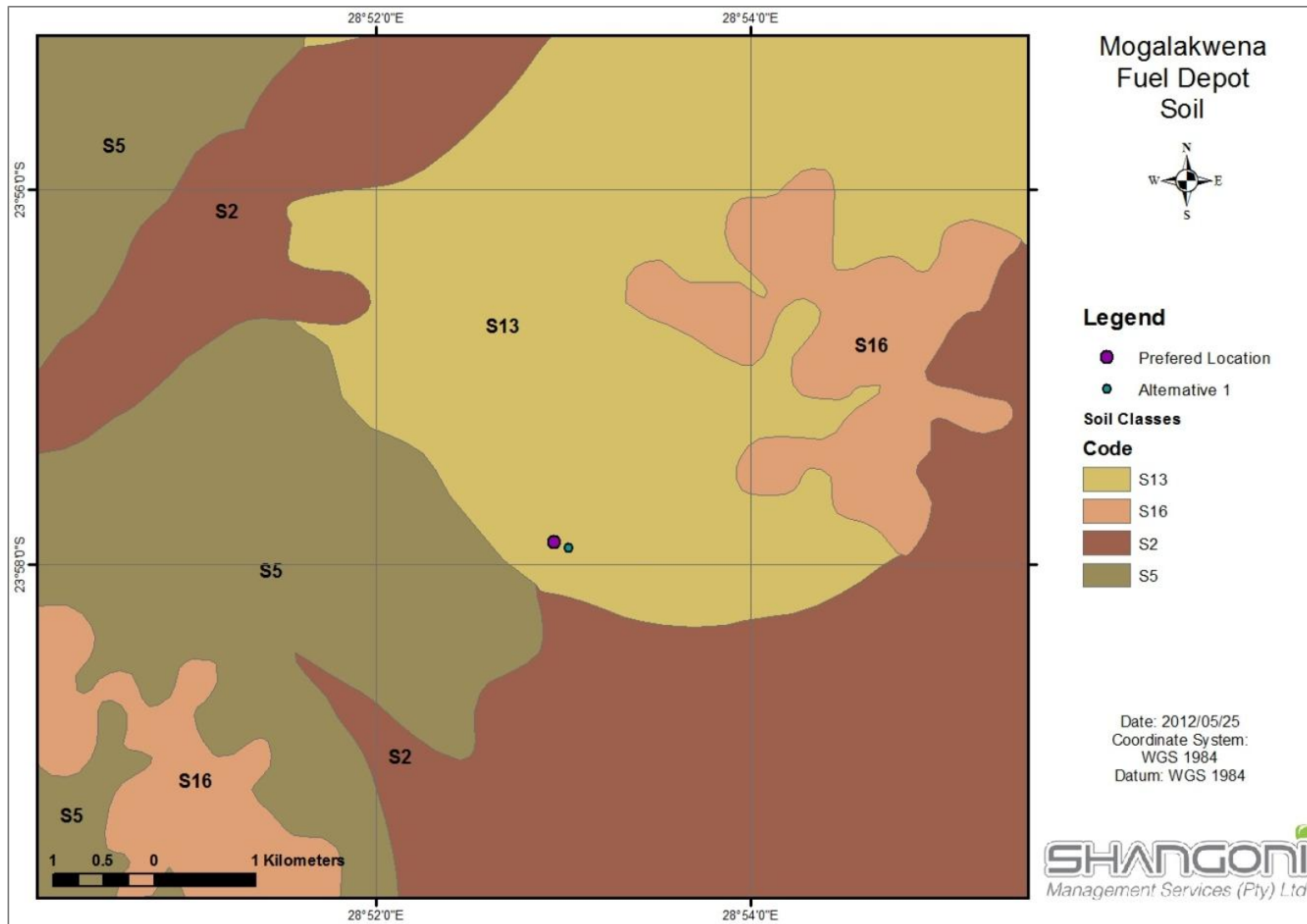


Figure 18: Soils of the area

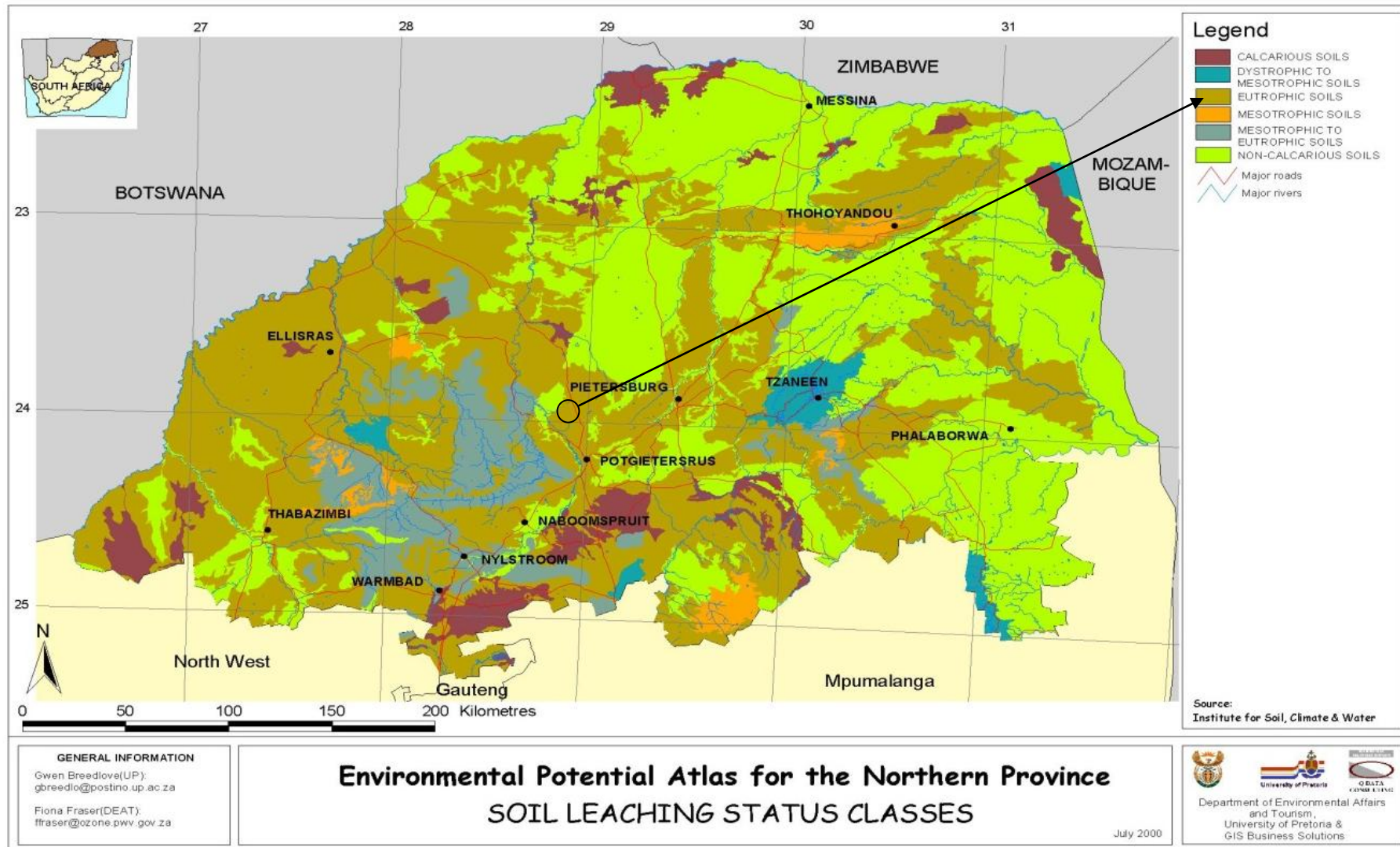


Figure 19: Soil leaching status classes (ENPAT, July 2000)



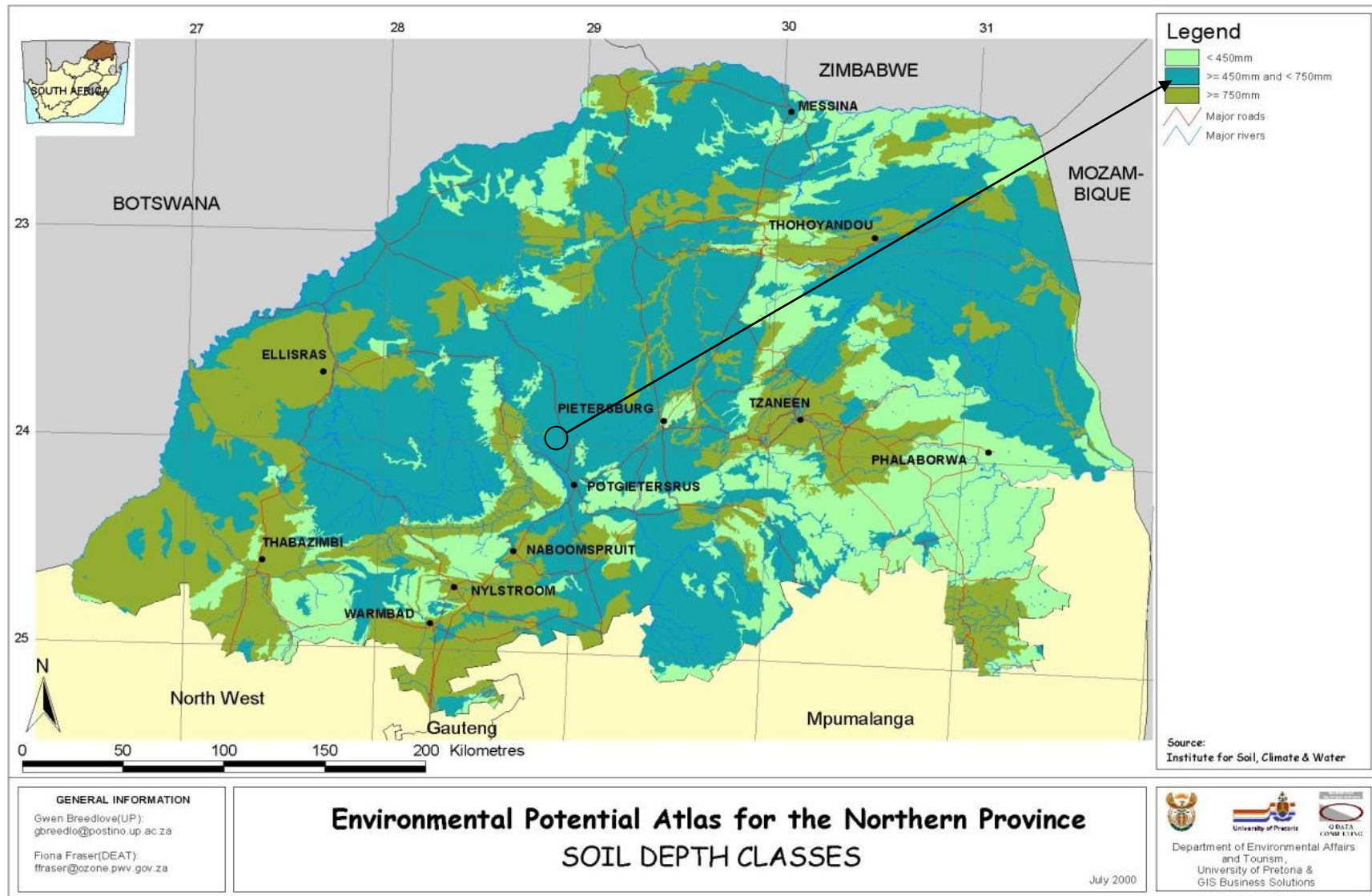


Figure 20: Soil depth classes (ENPAT, July 2000)

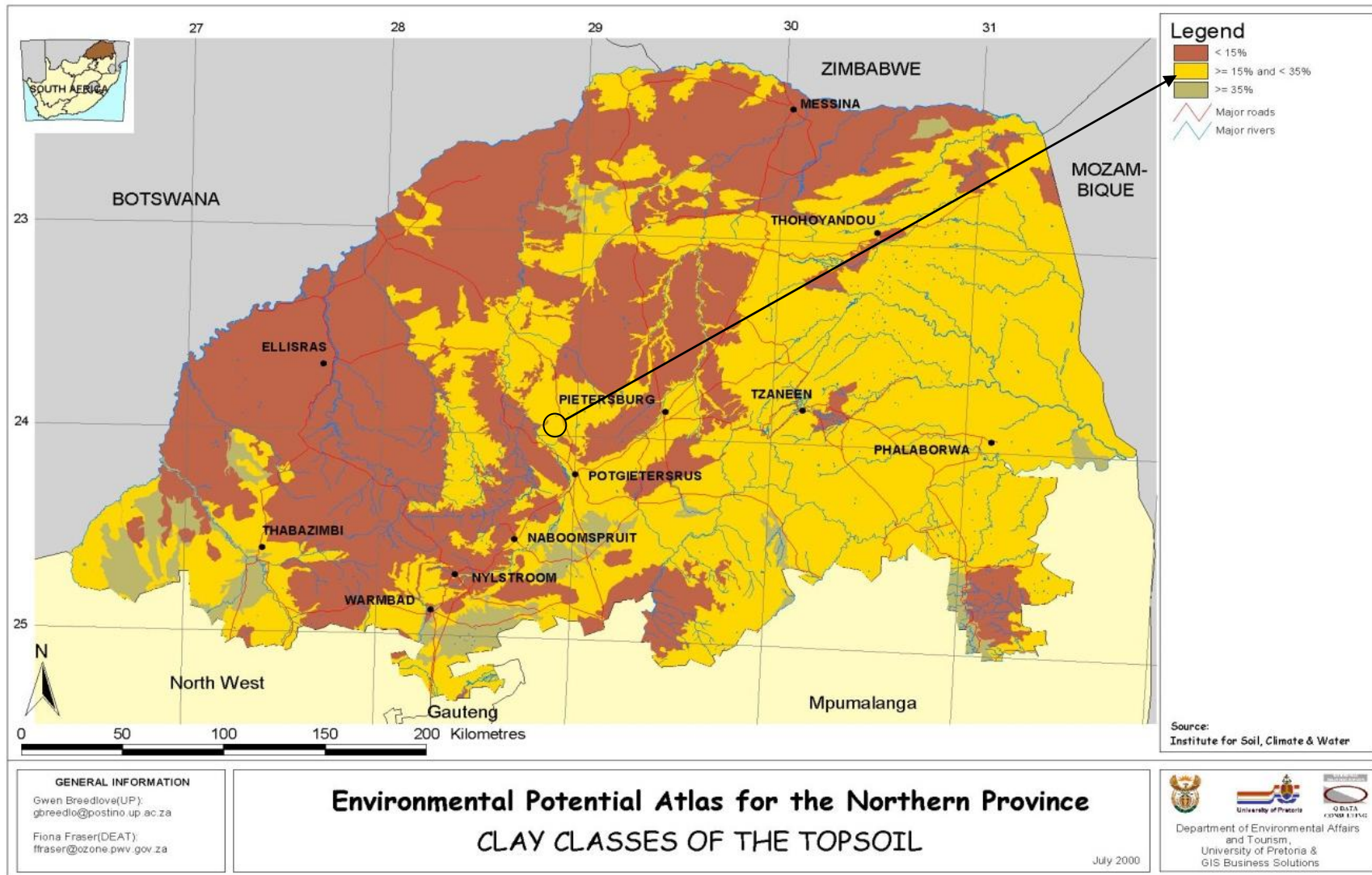


Figure 21: Clay classes of the topsoil (ENPAT, July 2000)

## 2.6 Land use and land capability

Areas around the mine are mainly used for commercial grazing and agricultural purposes. There are also a few rural settlements adjacent to the mine where most of the mine workers reside. According to the Environmental Potential Atlas for the Northern Province (Figure 22), the area where the mine is located has the following main land use types:

- Mining;
- Subsistence Farming
- Vacant or unspecified; and
- Build-up land.

The following broad land capability classes have been identified in the approved EMPr for the mine:

*Table 7: Land capability classes (SRK, 1997)*

Site	Area Disturbed	Land Capability
Sandsloot and adjacent infrastructure	755ha	Predominately grazing
Overysel	495ha	Grazing with very limited agriculture
Zwardfontein North	300ha	Arable
Zwartfontein South	90ha	Mixed arable and grazing
Tweefontein North	250ha	Grazing
Tweefontein South	35ha	Grazing

Mining is the current land use of both the preferred and alternative site and the sites are situated within the boundaries of the mine.



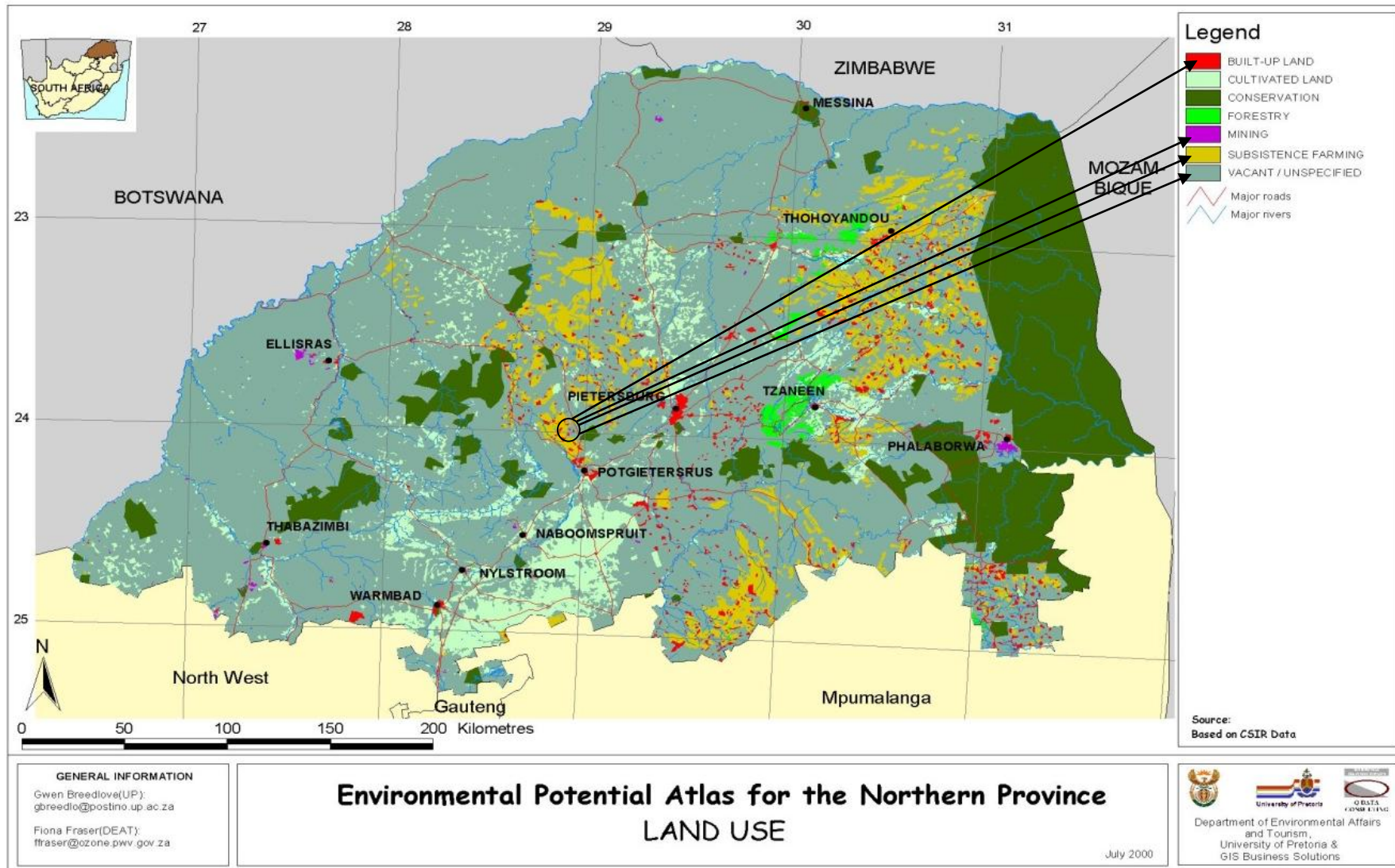


Figure 22: Land use of the Northern Province (ENPAT, July 2000)

## 2.7 Fauna and Flora

### 2.7.1 Flora

According to the Musina and Rutherford (2006) the site is characterised by the Makhado Sweet Bushveld vegetation type (Figure 23). This vegetation type is a transition between the higher-lying Polokwane Plateau and the lower-lying vegetation units of the Limpopo Valley (Musina & Rutherford, 2006). It is a natural open thornveld that tends to thicken up when the grass cover is reduced by overgrazing.

Important taxa for the vegetation type:

**Small Trees:** *Acacia erubescens*, *A. gerrardii*, *A. mellifera* subsp. *detinens*, *A. rehmanniana*, *Boscia albitrunca*, *Combretum apiculatum*, *Acacia tortilis* subsp. *heteracantha* and *Terminalia sericea*.

**Tall Scrubs:** *Commiphora pyracanthoides*, *Dichrostachys cinerea*, *Grewia flava*, *Hibiscus calyphyllus*, *Lycium shawii* and *Rhigozum obovatum*.

**Low Scrubs:** *Barleria lancifolia*, *Hirpicium bechuanense*, *Indigofera polioties*, *Melhania rehmannii* and *Pechuel-Loeschea leubnitziae*.

**Graminoids:** *Anthepera pubescence*, *Aristida stipitata* subsp. *gracilliflora*, *Cenchrus ciliaris*, *Enneapogon scoparius*, *Brachiaria nigropedata*, *Eragrostis trichophora*, *Panicum coloratum*, *P. maximum*, *Schmidtia pappophoroides* and *Urochloa mosambicensis*.

**Herbs:** *Chamaecrista absus*, *Corbichonia decumbens*, *Geigeria acaulis*, *Harpagophytum procumbens* subsp. *transvaalense*, *Heliotropium steudneri*, *Hemizygia elliotii*, *Hermstaedtia odorata*, *Leucas sexdentata*, *Osteospermum muricatum* and *Tephrosia purpurea* subsp. *leptostachya*.

**Endemic Taxon:** *Herb: Dicliptera minor* subsp. *pratis-manna*.

No natural vegetation remains at the preferred or alternative site. Therefore, no disturbance of natural vegetation will take place during construction of the permanent fuel storage site.

### 2.7.2 Fauna

Species that commonly occur in the area will be limited to small mammals, birds and reptiles (also snakes) due to the disturbed nature of the mining area.

**Mammals:** Approximately nine mammal species can be found in the area. All nine species have wide distribution ranges and are not restricted in terms of their ability to move or migrate.



**Birds:** Approximately 216 bird species were recorded in the quarter degree square where the mine is situated. Three of these species are classified as endangered in the Red Data List. All of the species are large migrating species and it is unlikely that breeding sites will be present at the mine.

**Reptiles and amphibians:** No red data species have been recorded in the quarter degree square where the mine is situated (SRK, 1996). The permanent fuel storage facility should not disturb any habitats as the area has historically been disturbed.



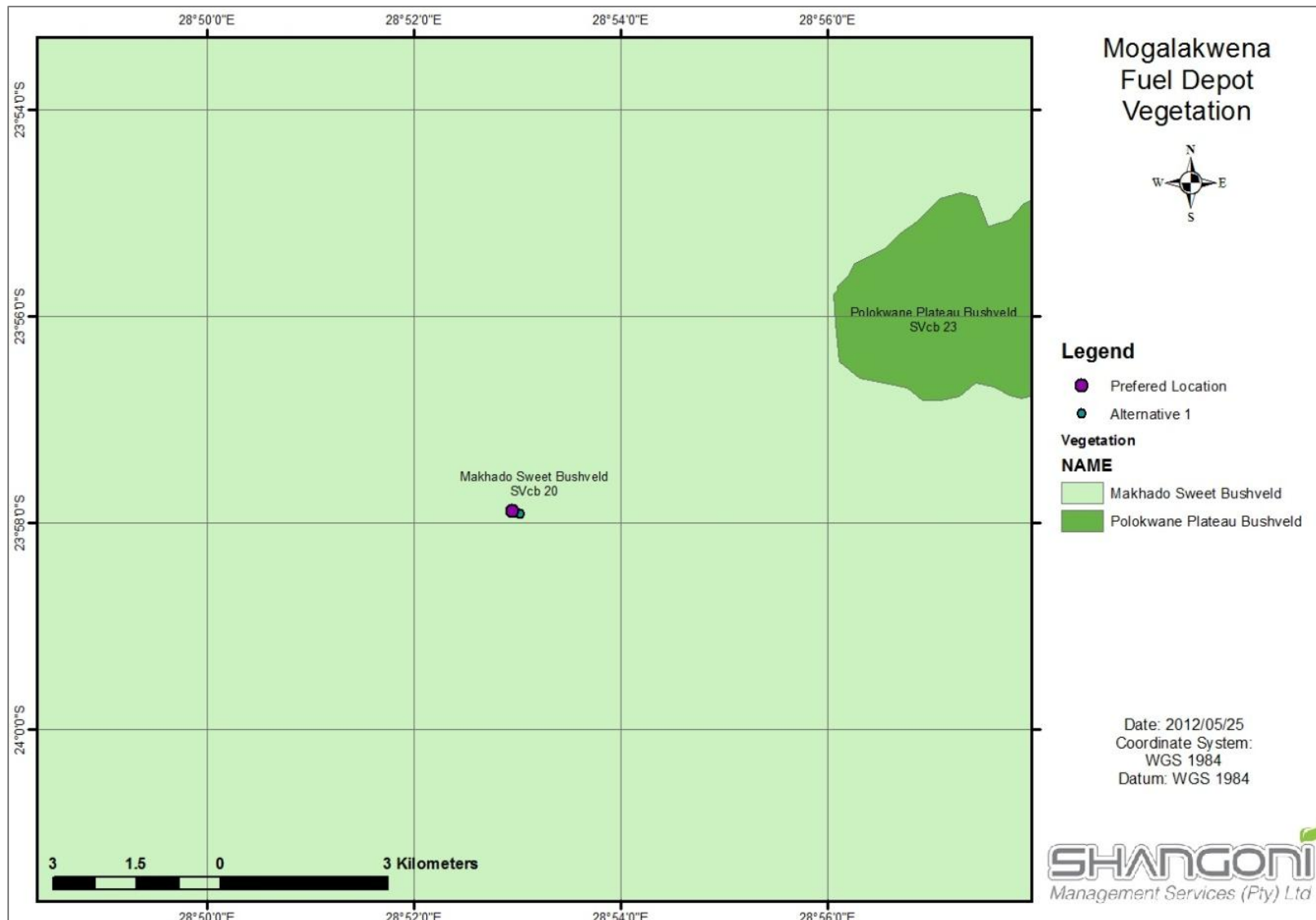


Figure 23: Vegetation of the site

## 2.8 Surface water

### 2.8.1 Catchment areas

The mine falls within the Limpopo River primary catchment area and the A61G quaternary catchment (Figure 24). The Groot Sandsloot River (1<sup>st</sup> order river) flows through the mining area, the Roosloot River (1<sup>st</sup> order river) flows south-east of the mining area and the Mogalakwena River (2<sup>nd</sup> order river) flows south-west of the mining area (Figure 25).

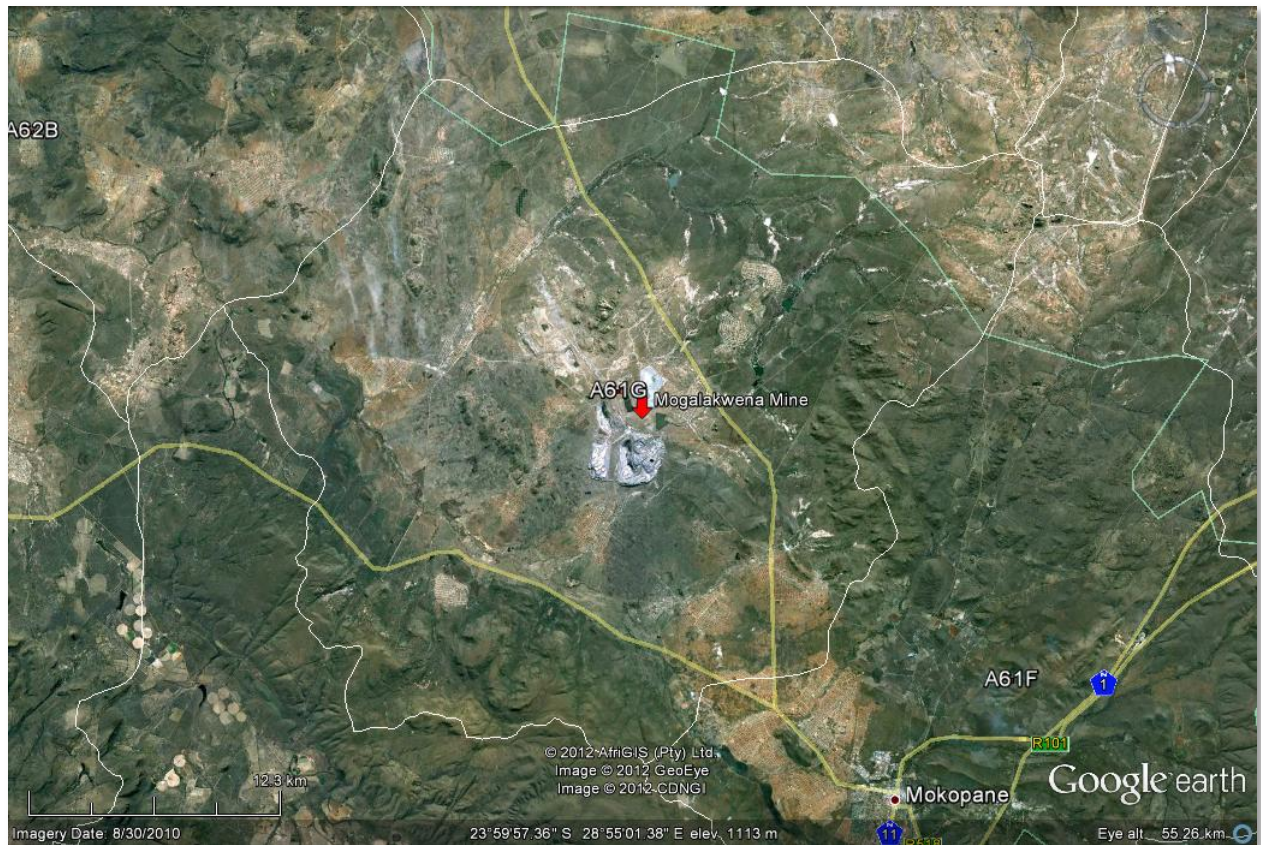


Figure 24: Quaternary catchment of the site





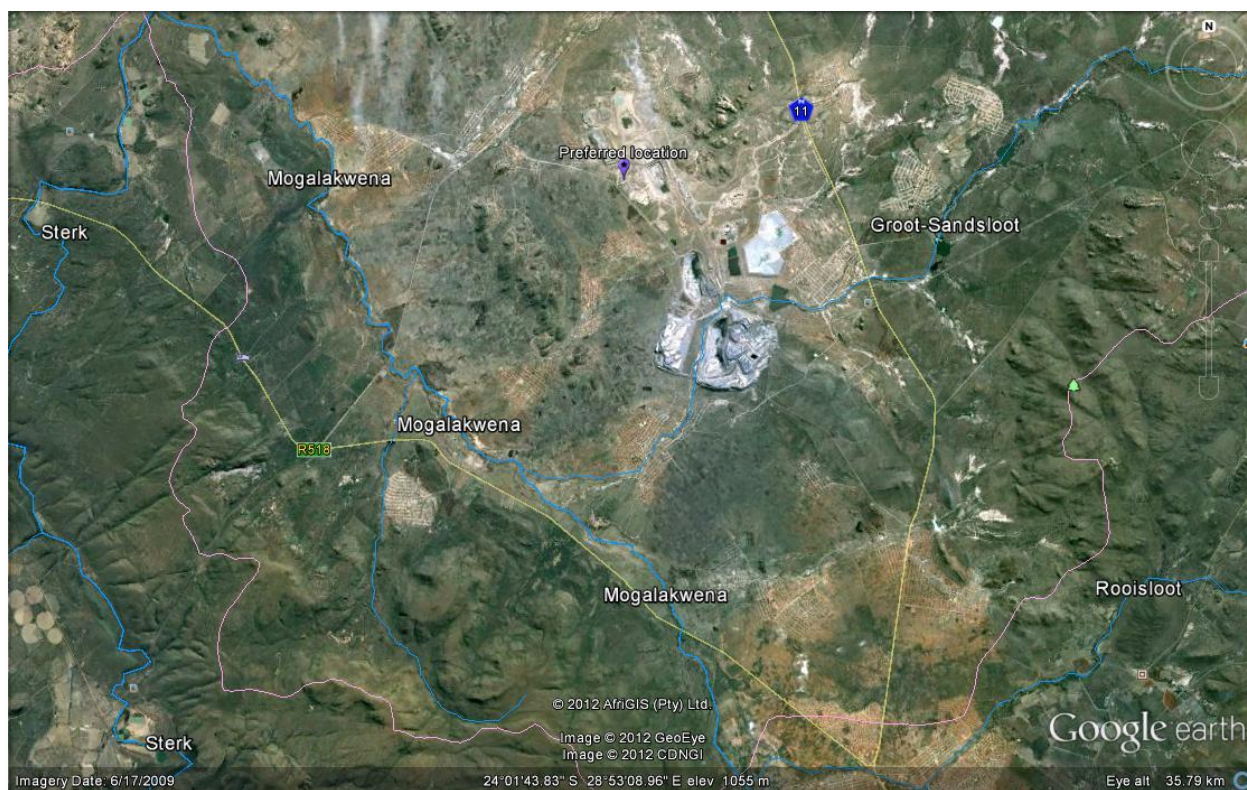


Figure 25: Rivers flowing in the vicinity of the site

## 2.9 Water Authority

The Department of Water Affairs (Limpopo regional office) is the responsible water authority of the area.

## 2.10 Groundwater

The mine is in close proximity to several townships that use groundwater for their water supply. The mean annual recharge of the area is  $2.3 \times 10^6 \text{ m}^3$  and the site falls within Limpopo Water Management Area. The depth of the water table varies between 1.64 and 19.56m in the vicinity of the project site.

### 2.10.1 General description of the geohydrology

The mining area has three (3) types of aquifers:

- Metadolomitic aquifers: only one of these is located close to the Sandsloot area;
- Semi confined, leaky weathered or fractured zone aquifers: This aquifer type is encountered most often. They have the form of a series of elongated troughs approximately parallel to the strike of the Bushveld rocks. The trough dimensions range from 2 to 4km along the strike and 0.5 to 1km perpendicular to the strike. The average thickness is 10-15m and the main water strikes are at a depth of 20-30m.
- Fractured aquifers: These are also uncommon (SRK, 1996).



## **2.11 Noise**

Noise at the site is mainly generated by the mining activities and in particular vehicles delivering and collecting fuel from the storage area. The proposed permanent fuel storage facility will not create any additional noise as the temporary fuel storage facility is already present.

## **2.12 Sites of archaeological and cultural interest**

No cultural, archaeological or historical features were observed on site. The preferred and alternative sites are located within the mine area and as such no new areas will be disturbed for the proposed activity.

## **2.13 Visual aspects**

The proposed fuel storage facility will form part of the existing visual impact of the mine.

## **2.14 Air Quality**

Air pollution at the mine is mainly limited to dust generation due to mining activities and wind erosion due to poor management of agricultural land surrounding the mining area.

## **2.15 Socio-economic aspects**

There are approximately five rural towns within an 8km radius of the centre of the mine. The area falls within ward no. 17 and 18 of the Mogalakwena Local Municipality, within the jurisdiction of the Waterberg District Municipality. Most of the residents of the rural townships are employed by the mine.



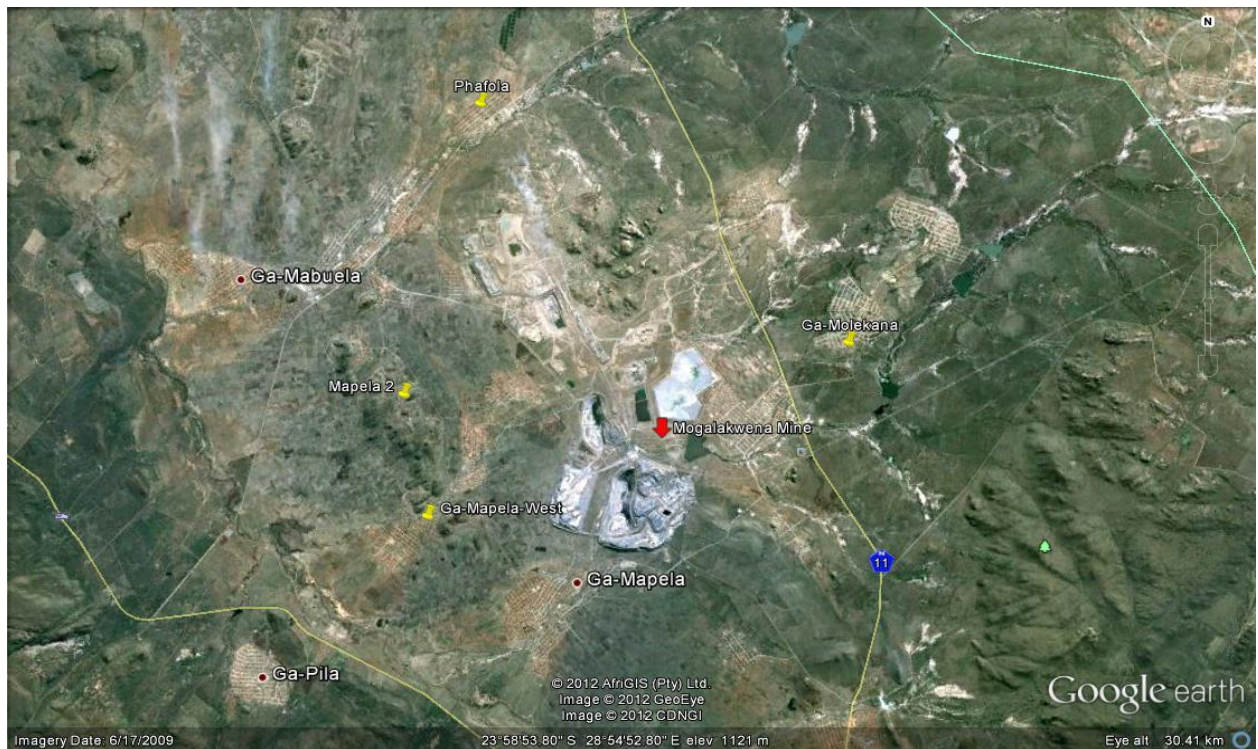


Figure 26: Rural towns adjacent to the mine

### 2.15.1 Demography

Mogalakwena Local Municipality has a very high unemployment rate and this is one of the main issues that need to be addressed in future. The lack of basic services in the area also requires attention. The Mogalakwena mine is one of the largest providers of employment in the municipal boundaries and they also assist with the economic growth of the municipality.

### 2.15.2 Major economic activities

The major economic activities in the area are mining and agriculture (farming with peanuts, maize sorghum, sunflower, wheat, cotton, tobacco, poultry, Bonsmara, goats and vegetables).

### 2.15.3 Unemployment and employment

The municipality has an unemployment rate of 45 - 70% of the economically active population. Woman and especially rural woman are most affected by the lack of job opportunities in the municipality as well as other social problems.



Table 8: Unemployment figures for Mogalakwena Local Municipality (Census 2001 and Community survey 2007)

	Employed		Unemployed		Not Economically Active	
	2001	2007	2001	2007	2001	2007
<b>Female</b>	16 345	22 698	19172	16 601	56 353	59 600
<b>Male</b>	20744	30 121	14 526	14335	37 919	43150

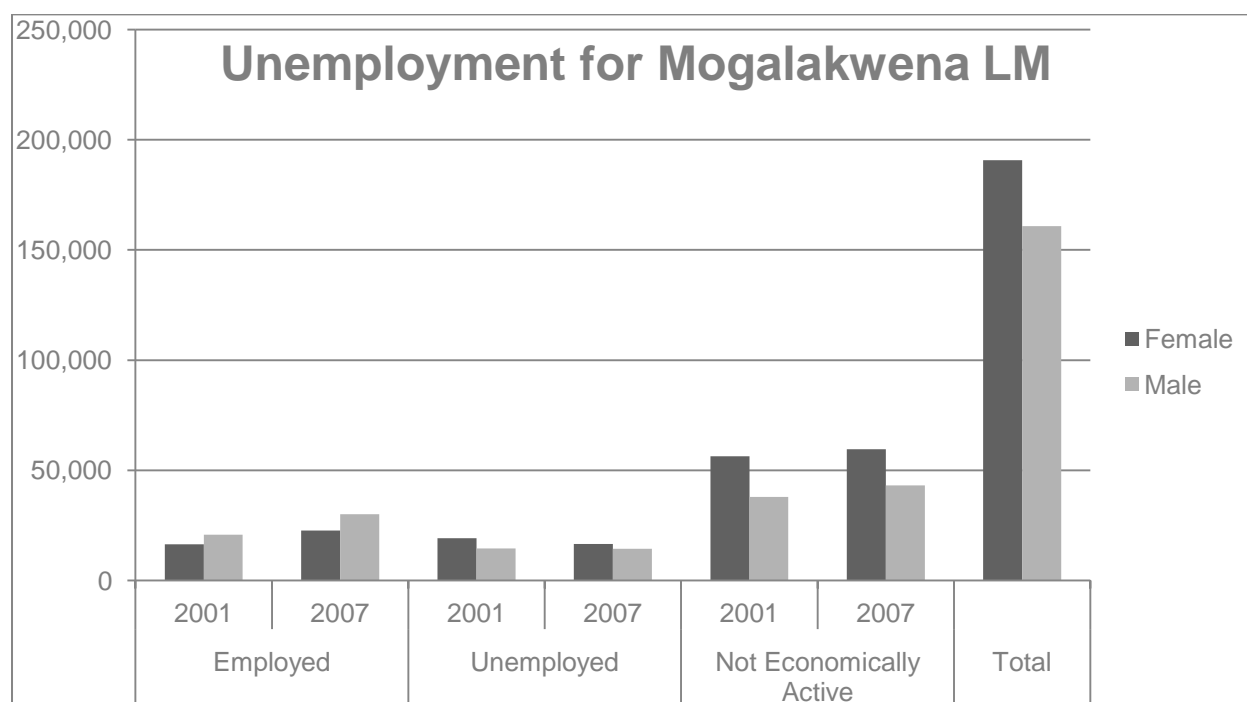


Figure 27: Unemployment in Mogalakwena Local Municipality

### 2.15.3 Population

According to the Integrated Development Plan (IDP) for Mogalakwena (2011/12), there are more women than men living in the municipal area and most people are between the age of 15 and 34 years.



## **3. LEGISLATION AND GUIDELINES APPLICABLE**

### **3.1 Laws of general application**

- Constitution of the RSA, 1996 (Act No 108 of 1996)
- National Environmental Management Act, 1998 (Act No 107 of 1998)
- Environment Conservation Act, 1989 (Act No 73 of 1989 as amended)
- Promotion of Access to Information Act, 2000 (Act No 2 of 2000 as amended)

### **3.2 Atmospheric emissions**

- National Environmental Management: Air Quality Act (Act No 39 of 2004)
- Environment Conservation Act, 1989 (Act No 73 of 1989) – Noise Control
- Regulations in terms of Section 25 of the Environment Conservation Act, 1989

### **3.3 Water Management**

- National Water Act, 1998 (Act No 36 of 1998)

### **3.4 Waste Management**

- National Environmental Management: Waste Act (Act No 59 of 2008)

### **3.5 Planning of new activities**

- National Environmental Management Act, 1998 (Act No 107 of 1998)

### **3.6 Biodiversity**

- National Environmental Management Biodiversity Act, 2004 (Act No 10 of 2004)
- Conservation of Agricultural Resources Act, 1983 (Act No 43 of 1983)
- National Veld and Forest Fire Act, 1998 (Act No 101 of 1998)
- Agricultural Pest Act, 1983 (Act No 36 of 1983 as amended) – GN R276 of 5 March 2004
- National Fencing Act, 1963 (Act No 31 of 1963 as amended)
- National Forest and Fire Laws Amendment Act (Act No 12 of 2001)

### **3.7 Land and Soil Management**

- National Environmental Management Act, 1998 (Act No 107 of 1998)
- Environmental Conservation Act, 1989 (Act No 73 of 1989)



### **3.8 Heritage resources**

- National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)

### **3.9 Protected areas**

- National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003 as amended)



## 4. DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

### 4.1 Construction Phase

The main impacts identified for the construction phase are listed below. It is important to note that the construction activities will take place at the already existing temporary storage and maintenance site within the mining area.

This environmental impact assessment report includes a full risk assessment of all environmental impacts. The Environmental Management Programme will set out mitigation measures to be implemented as part of the construction phase.

*Table 9: Main impacts associated with the construction phase*

<b>Soil Pollution</b>	
Contributing factors	Spillages from chemical toilets (temporary facilities if utilised)
	Spillages during the removal and relocation of existing fuel storage tanks
	Spillages during the removal and relocation of existing infrastructure
	Hydrocarbon spills from construction vehicles
	Incorrect storage and disposal of construction waste, general waste and hazardous waste material
<b>Generation of dust</b>	
Contributing factors	Dust generated by construction vehicles using internal gravel roads on the mine
	Dust from excavation activities
	Dust generated due to drivers not adhering to speed limits
<b>Generation of air emissions</b>	
Contributing factors	Vehicle emissions released from the construction vehicles and equipment used during relocation and construction
	Smoke from open fires where the workers warm themselves before work, during lunch, and after work
	Emissions released during the relocation of existing infrastructure when the fuel storage tanks have to be emptied
	Emissions from additional diesel generators on site
	Emissions from the refuelling of construction vehicles
<b>Generation of noise</b>	
Contributing factors	Noise generated by construction vehicles and equipment
<b>Ground water pollution</b>	



Contributing factors	Hydrocarbon leakages from heavy equipment
	Incorrect storage of hazardous waste with resultant seepages onto unprotected soil
	Incorrect storage of construction waste
	Incorrect disposal of hazardous waste, not disposed onto registered disposal site
	Incorrect disposal of construction waste, not disposed onto registered disposal site
	Incorrect disposal of domestic waste, not disposed onto registered disposal site
	Spillages during the removal and relocation of existing fuel storage tanks
<b>Fire hazard</b>	
Contributing factors	Open fires where employees warm themselves during winter
<b>Health and safety hazards</b>	
Contributing factors	Safety hazard to employees if equipment is not operated in the correct manner
	If employees do not receive the correct PPE for their specific job
	If employees do not adhere to safety rules implemented at the construction site at all times
<b>Soil erosion</b>	
Contributing factors	Erosion due to clearance of surrounding vegetation and topsoil
<b>Job creation during construction</b>	
Contributing factors	Additional job opportunities will be created to undertake the relocation and construction of the facility
<b>Training opportunities to workers</b>	
Contributing factors	Training of employees on aspects related to the construction phase to ensure safety and correct operation of equipment
<b>Economic investment in the area</b>	
Contributing factors	Short term investment in the local economy when construction materials need to be purchased
<b>Impact on water resource</b>	
Contributing factors	Storm water runoff from construction site
	Incorrect disposal of wastes (hazardous/domestic/construction)
	Leakages from small on site reservoirs used for water provision during construction

## 4.2 Operational Phase

The main impacts identified for the operational phase are listed below.

This environmental impact assessment report includes a full risk assessment of all environmental impacts. The Environmental Management Programme will set out mitigation measures to be implemented during the operational phase.





Table 10: Main impacts associated with the operational phase

<b>Soil Pollution</b>	
Contributing factors	Possible leakages from the fuel storage tanks, transfer lines/hoses
	Spillages during filling or emptying of fuel storage tanks
	Hydrocarbon leakages from vehicles at the fuel storage area
<b>Health and safety</b>	
Contributing factors	Work related injuries due to lack of training
	Work related injuries due to incompetence of the employee
	Work related injuries due to irresponsible actions from workers
	Work related injuries if procedures are not followed
	Injuries from not adhering to the maintenance schedule of equipment
	Safety hazard should a fuel storage tank fail
	Injury if the correct PPE is not provided or worn by employees
<b>Fire Hazard</b>	
Contributing factors	Fire hazard with fire extinguishers not being readily available on site
	Naked flames/ sparks causing explosion or fire
	Lack of training of personnel in the use of emergency response equipment
	Staff and contractors not following loading/offloading safety precautions
	Not having a designated smoking/cooking and heating area
<b>Waste</b>	
Contributing factors	Possible pollution due to incorrect storage of hazardous waste such as empty containers and maintenance rags. Pollution caused by incorrect cleaning of equipment that has come in contact with hazardous substances
	Lack of SHE procedures related to the different hazardous substances stored on site (empty or full containers), and insufficient training to support effective implementation
	Lack of procedures related to the correct disposal of the different hazardous substances, equipment and materials at the facility
<b>Visual Impact</b>	
Contributing factors	Visual impact from additional infrastructure at the facility
<b>Noise</b>	
Contributing factors	Noise from maintenance conducted at the facility
	Noise created by vehicles at the facility
	Health related effects if correct PPE is not provided and worn by employees
<b>Ground- and surface- water pollution</b>	
Contributing factors	Potential leakage of fuel storage tanks resulting in surface- and/or groundwater pollution
	Surface water contamination if clean storm water runoff is contaminated when



	flowing through “dirty areas” at the facility
	Possible pollution due to lack of maintenance resulting in failure of critical equipment (e.g. pumps, valves, bund etc.)
<b>Air Emission</b>	
Contributing factors	Release of emission when refuelling mine vehicles and when the fuel storage tanks are refilled
	Release of vehicle emission from mine vehicles at the facility
	Release of emission from empty containers not disposed of in the correct manner and/or containers that are not properly closed

### 4.3 Closure phase

Should the mine close, the fuel depot will also need to be decommissioned. The expected life of the mine is 50+ years. Should the facility need to be closed, a closure plan will be drafted that will be sent to LEDET and DMR for approval. The closure of the facility will only commence once approval of the closure plan has been received.

### 4.4 Specialist Studies

Specialist studies have been deemed unnecessary for this project based on the following:

- The proposed sites (preferred site and alternative site) lie within the confines of an operational mine;
- The preferred site is in an entirely disturbed state as a result of the mining activities occurring on site;
- No natural vegetation remains at the preferred site;
- The alternative site is in a partially disturbed state. As the site is situated within a disturbed mining area, the site is entirely isolated and as such cannot be seen as a migration corridor for fauna and flora; and
- The fuel storage tanks will be situated above ground, negating the need for extensive excavation activities.



## 5. PUBLIC PARTICIPATION PROCESS

### 5.1 Introduction

A Public Participation Process (PPP) is a requirement in terms of the 2010 EIA Regulations of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and it forms an integral part of any EIA process.

This section provides information pertaining to the PPP that was conducted by Shangoni Management Services during this particular assessment.

The purpose of this process is to gather information from the community and relevant Stakeholders that could ultimately affect the decision-making process concerning the Planning, Construction and Operational Phases of the proposed Anglo Platinum Mogalakwena Mine Permanent Fuel Storage Facility project. The community and public have been identified as I&APs and have been given the opportunity to participate in this process. Their comments, whether positive or negative, will influence the decision of the Authorities and the developer's final actions.

### 5.2 Objectives of the PPP

The PPP has the following objectives:

- To inform I&APs as well as all Stakeholders of the proposed development;
- To provide an opportunity for I&APs and Stakeholders to raise environmental issues or concerns and make suggestions;
- To promote transparency and an understanding of the project and its consequences;
- To serve as a structure for liaison and communication with I&APs and Stakeholders.

To summarise, the objective of the on-going PPP is to promote openness and transparency concerning the proposed fuel depot for the duration of the project. The process should by no means be regarded as a vehicle to temper opposition or objections. Any conclusions agreed upon must be socially, financially and technically acceptable and feasible in order to meet the requirements of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

### 5.3 The Guidelines Followed for the PPP

The PPP for this project was conducted by Shangoni Management Services and undertaken strictly according to the guidelines in terms of the National Environmental Management Act (NEMA), No. 107 of 1998, Chapter 6:



## 5.4 Public Participation Process

(1) This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.

(2) 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 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;

(b) giving written notice to -

the owner or person in control of that land if the applicant is not the owner or person in control of the land;

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;

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;

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;

the municipality which has jurisdiction in the area;

any organ of state having jurisdiction in respect of any aspect of the activity; and

any other party as required by the competent authority;

(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;

(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 local 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 sub regulation (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;

(iii) or any other disadvantage.

(3) A notice, notice board or advertisement referred to in sub regulation (2) must

(a) give details of the application which is subjected to public participation; and



(b) state-

- (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
- (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
- (iii) the nature and location of the activity to which the application relates;
- (iv) where further information on the application or activity can be obtained; and
- (vi) the manner in which and the person to whom representations in respect of the application may be made.

(4) A notice board referred to in sub regulation (2) must-

- (a) be of a size at least 60cm by 42cm; and
- (b) display the required information in lettering and in a format as may be determined by the competent authority.

(5) Where deviation from sub regulation (2) may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the competent authority.

(6) Where a basic assessment report, scoping report or environmental impact assessment report as contemplated in regulations 22, 28 and 31 respectively is amended because it has been rejected or because of a request for additional information by the competent authority, and such amended report contains new information, the amended basic assessment report, scoping report or environmental impact assessment report must be subjected to the processes contemplated in regulations 21, 27 and 31, as the case may be, on the understanding that the application form need not be resubmitted.

(7) When complying with this regulation, the person conducting, the public participation process must ensure that-

- (a) information containing all relevant facts in respect of the application is made available to potential interested and affected parties; and
- (b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.

(8) Unless justified by exceptional circumstances, as agreed to by the competent authority, the applicant and EAP managing the environmental assessment process must refrain from conducting any public participation process during the period of 15 December to 2 January.



## 5.5 Register of interested and affected parties

5.5.(1) An EAP managing an application must open and maintain a register which contains the names, contact details and addresses of -

- (a) all persons who, as a consequence of the public participation process conducted in respect of that application in terms of regulation 54, have submitted written comments or attended meetings with the applicant or EAP;
- (b) all persons who, after completion of the public participation process referred to in paragraph (a), have requested the applicant or the EAP managing the application, in writing, for their names to be placed on the register; and
- (c) all organs of state which have jurisdiction in respect of the *activity* to which the application relates.

(2) An EAP managing an application must give access to the register to any person who submits a request for access to the register in writing.

Registered interested and affected parties entitled to comment on submissions

56.(1) A registered interested and affected party is entitled to comment, in writing, on all written submissions, including draft reports made to the competent authority by the applicant or the EAP managing an application, and to bring to the attention of the competent authority any issues which that party believes may be of significance to the consideration of the application, provided that-

- (a) comments are submitted within-
  - (i) the timeframes that have been approved or set by the competent authority; or
  - (ii) any extension of a timeframe agreed to by the applicant or EAP;
- (b) a copy of comments submitted directly to the competent authority is served on the EAP; and
- (c) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

(2) Before the EAP managing an application for environmental authorisation submits a final report compiled in terms of these Regulations to the competent authority, the EAP must give registered interested and affected parties access to, and an opportunity to comment on the report in writing.

(3) The report referred to in sub regulation (2) include-

- (a) basic assessment reports;
- (b) basic assessment reports amended and resubmitted in terms of regulation 24 (4);
- (c) scoping reports;
- (d) scoping reports amended and resubmitted in terms of regulation 30(3);
- (e) specialist reports and reports on specialised processes compiled in terms of regulation 32;
- (f) environmental impact assessment reports submitted in terms of regulation 31;



- (g) environmental impact assessment reports amended and resubmitted in terms of regulation 34(4); and
- (h) draft environmental management programmes compiled in terms of regulation 33.
- (4) The draft versions of reports referred to in sub regulation (3) must be submitted to the competent authority prior to awarding registered interested and affected parties an opportunity to comment.
- (5) Registered interested and affected parties must submit comments on draft reports contemplated in sub regulation (4) to the EAP, who should record it in accordance with regulations 21, 28 or 31.
- (6) Registered interested and affected parties must submit comments on final reports contemplated in sub regulation (3) to the competent authority and provide a copy of such comments to the applicant or EAP.
- (7) The competent authority must, in order to give effect to section 24O of the Act, on receipt of the draft reports contemplated in sub regulation (5), request any State department that administers a law relating to a matter affecting the environment to comment within 40 days.
- (8) The timeframe of 40 days as contemplated in sub regulation (7) must be read as 60 days in the case of waste management activities as contemplated in the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), on which the Department of Water Affairs must concur and issue a record of decision in terms of section 49(2) of the National Environmental Management: Waste Management Act, 2008 (Act No. 59 of 2008).
- (9) (a) When a State department is requested by the competent authority to comment, such State department must, within 40 days or in the case of Department of Water Affairs, 60 days for waste management activities, of being requested to comment by the competent authority, provide comments to the competent authority.
- (b) If a State department fails to submit comments within 40, or 60 days for waste management activities, from the date on which the Minister, MEC, Minister of Mineral Resources or identified competent authority requests such State department in writing to submit comment, it will be regarded that there are no comments.

Comments of interested and affected parties to be recorded in reports submitted to competent authority

5.7. (1) The EAP managing an application for environmental authorisation must ensure that the comments of interested and affected parties are recorded in reports and that such written comments, including records of meetings, are attached to the report, submitted to the competent authority in terms of these Regulations.



(2) Where a person is desiring but unable to access written comments as contemplated in sub regulation (1) due to-

- (i) a lack of skills to read or write;
- (ii) disability; or
- (iii) any other disadvantage,

reasonable alternative methods of recording comments must be provided for.

## 5.6 Public Participation Process Followed

The following PPP was conducted for the proposed Mogalakwena fuel storage facility project:

- Identification of key Interested and Affected Parties (all adjacent landowners);
- Identification of key Stakeholders;
- Informing the key Stakeholders of the process by means of correspondence;
- Placement of a press notice in the Noordlike Nuus, informing the public of the process;
- Placement of site notices at the site; and
- Correspondence with I&APs and Stakeholders and the addressing of their comments.

### 5.6.1 Identification & Registration of I&APs on a Database

Through networking and advertising, I&APs were registered on a database. Shangoni ensured that individuals or organisations from an institutional as well as a geographical point of view were identified.

Geographically, Shangoni focused on nearby or adjacent landowners, communities and structures that represents them. Institutionally, the focus was on those organisations or individuals that may influence policies and decisions or make a contribution to the project. Not all of these organisations were necessarily in the direct project sphere of impact.

A list of potential interested and affected parties (including people from the communities adjacent to the mine) was compiled with the mine's assistance. These people were contacted to obtain their postal addresses or to establish other ways of sending them the information. The list of interested and affected parties is given in Table 11.

### 5.6.2 Information to I&APs

The final letters were sent to the list of identified I&APs as well as organs of state on 30 April 2012. A period of more than 40 days was provided for interested and affected parties to register and to send their comments. The public participation commenced on 30 April 2012 and closed on 11 June 2012. The notification documentation included the following:

- Notification letter (Figure 28);





- Background information document (Figure 29 and 30);
- Stakeholder registration form (Figure 31 and 32); and
- Locality map (Figure 2).

Proof of postage of the notification letters is given in Figures 33 and 34.





Figure 28: Example of the notification letters sent to I&APs



APPLICATION FOR ENVIRONMENTAL AUTHORISATION, PERMANENT FUEL STORAGE FACILITY FOR  
ANGLO AMERICAN MOGALAKWENA PLATINUM MINE

MOKOPANE LOCAL MUNICIPALITY, LIMPOPO

APRIL 2012

EIA Ref: 12/1/9/2-W21

## 1. INTRODUCTION

The applicant, Rustenburg Platinum Mines Limited – Mogalakwena Section, has initiated an Environmental Authorisation process in order to obtain Environmental Authorization for the proposed permanent fuel storage facility.

## 2. LEGAL REQUIREMENTS

In accordance with the regulations published in Government Notice R. 543 and R. 545 of 18 June 2010, in terms of section 24D of the National Environmental Management Act, 1998 (Act No. 107 of 1998), the applicant is required to carry out a Scoping and Environmental Impact Assessment for the following activities:

Activity No 3: "The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres."

## 3. ENVIRONMENTAL ASSESSMENT PRACTITIONER

Shangoni Management Services (Pty) Ltd. was appointed by the applicant as the independent Environmental Assessment Practitioner (EAP) to undertake the Scoping and Environmental Impact Assessment process.

## 4. SITE DESCRIPTION

4.1 **Property Description:** Both preferred as well as alternative Sites is located on Portion 0 of the farm Zwartfontein 818 LP

### 4.2 Location:

The project site is located on the N11 approximately 25km to the North-west of Mokopane (Potgietersrus). The sites area located within the Mogalakwena mine with their coordinates as follows:

1. Preferred location: 23°57'52.91"S & 28°52'57.25"E
2. Alternative location: 23°57'54.69"S & 28°53'1.86"E



Figure 1: Preferred Location for fuel storage site



Figure 2: Alternative Location for fuel storage facility



Figure 3: Regional locality of Mogalakwena Mine

Figure 29: Background information document (page 1)



## 5. DESCRIPTION OF PROPOSED ACTIVITY:

The current temporary fuel storage facility which received environmental authorization in 2007 for a period of 5 years was never constructed on the location that was specified in the ROD. An amendment application was submitted to the Department to change the location to the west of the original application site, while waiting on correspondence from the Department the mine decided to apply for a permanent storage facility instead of having to reapply for a temporary facility. The permanent facility will include the following;

- Aboveground fuel and oil storage for approximately 1 000m<sup>3</sup>.
- Washing Bay area
- Servicing area for heavy mining equipment

## 6. PUBLIC PARTICIPATION PROCESS

Public participation is an integral part of the Scoping and Environmental Impact Assessment process, and will include the following components:

### First part of the Public Participation:

The primary purpose of this phase is to give potential interested and affected parties (I&APs) an opportunity to register as an interested or affected party and to submit comments and concerns. These comments and concerns are included in the Scoping Report and Environmental Impact Assessment Report.

### Comment on the Scoping Report and Environmental Impact Report:

The draft Scoping Report will be made available to registered I&APs to provide them with an opportunity to comment, in writing, on this document before it is submitted to the competent authority. All comments received will be included in a comments and responses report compiled by the Environmental Assessment Practitioner. This report will describe the issue raised, the date it was raised and by whom, and how the issue will be, or has been dealt with.

Comments on the draft Scoping Report are included in the final Scoping report prior to submission to the National Department of Environmental Affairs and the Department of Water Affairs.

Following the submission of the Scoping Report, a draft Environmental Impact Report (EIR) and Environmental Management Plan (EMP) will be made available to I&APs. Comments on the draft EIR and EMP will also be incorporated into the final EIR and EMP prior to their submission to the above-mentioned Departments.

**Online Participation:** For online registrations, submission of comments and review of project related documentation

1. Go to [www.shangoni.co.za](http://www.shangoni.co.za)
2. Click on public participation
3. Select project of interest
4. Register as a stakeholder under "Registration"
5. Submit comment/concern electronically
6. All available project related documentation is available for perusal throughout the process
7. As the project progresses, notices will be placed under the notices/updates tab
8. If you are registered you will receive an e-mail to inform you of any new developments with regards to the project and also when the reports are available for public review.

### Contact Details of EAP

Your participation is important for the process. If you would like to be added to our database of stakeholders who wish to participate in this process, or should you have any queries regarding the process or comments about the proposed development, please contact [Miss Isabel Hough](mailto:isabelhough@shangoni.co.za) (details below) before or on 11 June 2012.

### Shangoni Management Services (Pty) Ltd.

#### Postal address:

PO Box 74726  
Lynnwood Ridge  
Pretoria  
0040

#### Contact details:

Tel:+27 12 807 7036  
Cell:+27 79 534 4303  
Fax:+27 12 807 1014  
Fax to Email: 086 578 9670  
Email: [isabelhough@shangoni.co.za](mailto:isabelhough@shangoni.co.za)

For online participation go to [www.shangoni.co.za](http://www.shangoni.co.za) and click on Public Participation.



Figure 30: Background information document (page 2)



<b>STAKEHOLDER REGISTRATION FORM</b>	
<b>ANGLO AMERICAN MOGALAKWENA PLATINUM MINE</b>	
PLEASE E-MAIL / FAX THIS FORM TO Miss Isabel Hough: <a href="mailto:isabel@shangoni.co.za">isabel@shangoni.co.za</a> /086 578 9670/012 807 1014 EIA Ref: 12/9/2-W21; SMS Ref Nr. ANG/mog/16-09-11	
NAME	
SURNAME	
INITIALS	
TITLE	
<b>CONTACT DETAILS</b>	
<b>HOME / PRIVATE</b>	
TEL (H)	
CELL	
EMAIL	
FAX (H)	
FAX 2 E-MAIL	
POSTAL ADDRESS	
PHYSICAL ADDRESS	
<b>WORK</b>	
TEL (W)	
CELL (W)	
EMAIL	
FAX (W)	
FAX 2 E-MAIL	
POSTAL ADDRESS	
PHYSICAL ADDRESS	

Figure 31: Stakeholder registration form (page 1)





### List of REGISTERED LETTERS Lys van GEREGISTREERDE BRIEWE (with an insurance option/met 'n versekeringsopsie) Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Isabel Hough  
Naam en adres van afsender: Shangoni Management Services (Pty) Ltd  
P.O. Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae  
Toll-free number  
Tolry nummer  
**0800 111 502**

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Department of Agriculture (District) Private Bag X2455 Mokopane 0600	Mr. Masango R.				REGISTERED LETTER Affix to a registered letter RD 481 611 638 Z.A. CUSTOMER COPY 301028R
2	LIBSA-Mokopane PO Box 14 Mahwelereng 0626	Mr. Mathlobogane D.				REGISTERED LETTER Affix to a registered letter RD 481 611 529 Z.A. CUSTOMER COPY 301028R
3	Limdev-Mokopane PO Box 760 Lebowakgomo 0737	Ms Lekalake C.				CUSTOMER COPY 301028R REGISTERED LETTER Affix to a registered letter RD 481 611 567 Z.A. CUSTOMER COPY 301028R
4	Limpopo Department of Water Affairs and Forestry Private Bag X9506 Polokwane 0700	Mr. A Matukane				REGISTERED LETTER Affix to a registered letter RD 481 611 637 Z.A. CUSTOMER COPY 301028R
5	Limpopo Department of Agriculture Private Bag X9487 Polokwane 0700	Charles De Kock				REGISTERED LETTER Affix to a registered letter RD 481 611 672 Z.A. CUSTOMER COPY 301028R
6	Cnr of Suid and Dorp Streets, Private Bag X9484 Polokwane 0700	Tinyiko Malungani				REGISTERED LETTER Affix to a registered letter RD 481 611 672 Z.A. CUSTOMER COPY 301028R
7	The Chief Executive Officer, South African Heritage Resources Agency, PO Box 4631, Cape Town 8000	Phillip Hire				CUSTOMER COPY 301028R REGISTERED LETTER Affix to a registered letter RD 481 611 876 Z.A. CUSTOMER COPY 301028R
8	Department of Mineral Resources P/Bag X9467, 101 Dorp Street Polokwane, 0700	Kolani T.C.				REGISTERED LETTER Affix to a registered letter RD 481 611 876 Z.A. CUSTOMER COPY 301028R
9						
10						

Number of letters posted 8 Total  
Getal briewe gepos 8 Totaal

Signature of client \_\_\_\_\_  
Handtekening van kliënt \_\_\_\_\_

Signature of accepting officer \_\_\_\_\_  
Handtekening van aanneembeampte \_\_\_\_\_

Date stamp \_\_\_\_\_  
Datumstempel \_\_\_\_\_

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

MASIQHAME PRINTERS 701248

Figure 33: Proof of notification letters posted (page 1 and 2)

### List of REGISTERED LETTERS Lys van GEREGISTREERDE BRIEWE (with an insurance option/met 'n versekeringsopsie) Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Isabel Hough  
Naam en adres van afsender: Shangoni Management Services (Pty) Ltd  
P.O. Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae  
Toll-free number  
Tolry nummer  
**0800 111 502**

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Mogalakwena Fire Brigade, PO Box 34 Mokopane, 0600	Mr. Hudson G.				REGISTERED LETTER Affix to a registered letter RD 622 628 947 Z.A. CUSTOMER COPY 301028R
2	S.A Red Cross-Mokopane Branch 56 Clerk Street, Mokopane 0600	Mr. Mamabolo G.				REGISTERED LETTER Affix to a registered letter RD 622 628 831 Z.A. CUSTOMER COPY 301028R
3	Mokopane Community Need Forum PO Box 746, Mokopane 0600	Mrs. De Wet E.				REGISTERED LETTER Affix to a registered letter RD 622 628 928 Z.A. CUSTOMER COPY 301028R
4	Mahwelereng Centre of Hope, PO Box 873, Mahwelereng 0626	Ms. Ledwaba M.				REGISTERED LETTER Affix to a registered letter RD 622 628 955 Z.A. CUSTOMER COPY 301028R
5	Thobela Centre for the Disabled, Pastnet Suite #232, Private Bag X2499 Mokopane 0600	Ms. Magashoa S.				REGISTERED LETTER Affix to a registered letter RD 622 628 955 Z.A. CUSTOMER COPY 301028R
6	Kuta o Oke CHBC, PO Box 153, Mahwelereng 0626	Ms. Khalo G.				REGISTERED LETTER Affix to a registered letter RD 622 628 916 Z.A. CUSTOMER COPY 301028R
7	Mahwelereng SAPS, PO Box 54 Mahwelereng 0626	Station Commander: Colonel Jacobus Edele Engelen				REGISTERED LETTER Affix to a registered letter RD 481 611 788 Z.A. CUSTOMER COPY 301028R
8	Mokopane SAPS, PO Box 27 Mokopane, 0626	Station Commander				REGISTERED LETTER Affix to a registered letter RD 481 611 655 Z.A. CUSTOMER COPY 301028R
9	Tin Mine SAPS, PO Box 2475 Mokopane, 0626	Station Commander Captain Makatu				REGISTERED LETTER Affix to a registered letter RD 481 611 584 Z.A. CUSTOMER COPY 301028R
10	Department of Health, Postnet Suite 42 Private Bag X 9676, Polokwane 0700	Mr. Moetlo G.				REGISTERED LETTER Affix to a registered letter RD 481 611 584 Z.A. CUSTOMER COPY 301028R

Number of letters posted 10 Total  
Getal briewe gepos 10 Totaal

Signature of client \_\_\_\_\_  
Handtekening van kliënt \_\_\_\_\_

Signature of accepting officer \_\_\_\_\_  
Handtekening van aanneembeampte \_\_\_\_\_

Date stamp \_\_\_\_\_  
Datumstempel \_\_\_\_\_

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

MASIQHAME PRINTERS 701248

### List of REGISTERED LETTERS Lys van GEREGISTREERDE BRIEWE (with an insurance option/met 'n versekeringsopsie) Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Isabel Hough  
Naam en adres van afsender: Shangoni Management Services (Pty) Ltd  
P.O. Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae  
Toll-free number  
Tolvry nommer  
**0800 111 502**

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Masehlanteng Village, P.O. Box 1130 Mokopane, 0600	Mr. J. Lekalakala				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 862 ZA CUSTOMER COPY 301020R
2	Masadi Village, P.O. Box 3762 Mokopane, 0600	Mr. Lekalakala M.M				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 622 628 862 ZA CUSTOMER COPY 301020R
3	Ga-Madiba Village, P.O. Box 1634 Mokopane 0600	Mr. Modisa James				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 875 ZA CUSTOMER COPY 301020R
4	Sekgakapeng Village, P.O. Box 1925 Segagateng village 0651	Mrs. Kekana Jeanette				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 875 ZA CUSTOMER COPY 301020R
5	Ga-Kgubudi, P.O. Box 1171 Mahwelereng, 0626	Mr. Kekana M.J.				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 805 ZA CUSTOMER COPY 301020R
6	Mountainview Village, P.O. Box 1954 Mahwelereng 0626	Mr. Kgosana L.L.				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 622 628 876 ZA CUSTOMER COPY 301020R
7	Sandsloot Village, P.O. Box 1935 Mahwelereng 0625	Mr. Mabusea L.J.				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 622 628 893 ZA CUSTOMER COPY 301020R
8	Maroteng Village, P.O. Box 3708 Mokopane 0600	Lekalakala S.J.				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 622 628 889 ZA CUSTOMER COPY 301020R
9	Speater, P.O. Box 34, Mokopane 0600	Ms M.Mabusea				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 622 628 902 ZA CUSTOMER COPY 301020R
10	Municipal Manager, P.O. Box 34, Mokopane 0600	Mr. S.W Kekana				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 611 578 445 ZA CUSTOMER COPY 301020R

Number of letters posted  
Getal briewe gepos 10 Total  
Totaal R R R R

Signature of client  
Handtekening van kliënt \_\_\_\_\_

Signature of accepting officer  
Handtekening van aanneembeampte \_\_\_\_\_

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentare bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

DATE STAMP: 02 MAY 2012 11:00 AM

Datumstempel

791248

Figure 34: Proof of notification letters posted (page 3 and 4)

### List of REGISTERED LETTERS Lys van GEREGISTREERDE BRIEWE (with an insurance option/met 'n versekeringsopsie) Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Isabel Hough  
Naam en adres van afsender: Shangoni Management Services (Pty) Ltd  
P.O. Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae  
Toll-free number  
Tolvry nommer  
**0800 111 502**

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Ga-Chaba Village, Chaba Village Mapela, 0610	Mr. Chaba				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 933 ZA CUSTOMER COPY 301020R
2	Ga-Mabusea Village, Mmomp School P.O. Box 260, Mapela 0610	Mr. Makuseia				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 952 ZA CUSTOMER COPY 301020R
3	Mashaheng Village, P.O. Box 841 Mapela 0610	Mr. Koopedi				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 952 ZA CUSTOMER COPY 301020R
4	Ga-Seema Village, 252 Section A4, Mamelodi west, 0122	Mr. Seema				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 978 ZA CUSTOMER COPY 301020R
5	Ga-Chokoe Village, P.O. Box 75 Mapela, 0610	Mr. Chokoe				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 880 ZA CUSTOMER COPY 301020R
6	Ga-Matopa Village, P.O. Box 144 Mapela 0610	Mr. Moses Mojela				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 995 ZA CUSTOMER COPY 301020R
7	Ga-Lelaka Village, P.O. Box 898 Mapela, 0610	Mr. Lelaka				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 902 ZA CUSTOMER COPY 301020R
8	Ga-Matlou Village, 0104 Matlou section, Mapela 0610	Mr. Matlou				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 690 ZA CUSTOMER COPY 301020R
9	Ga-Masanya Village, P.O. Box 1943 Mahwelereng 0626	Mr. Masanya D.N.				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 930 ZA CUSTOMER COPY 301020R
10	Ga-Machikiri Village, Machikiri Primary School, Mahwelereng 0626	Mr. Machikiri M.M				REGISTERED LETTER Affix a 200x75 (200mm x 75mm) tracking label RD 481 611 859 ZA CUSTOMER COPY 301020R

Number of letters posted  
Getal briewe gepos 10 Total  
Totaal R R R R

Signature of client  
Handtekening van kliënt \_\_\_\_\_

Signature of accepting officer  
Handtekening van aanneembeampte \_\_\_\_\_

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentare bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

DATE STAMP: 02 MAY 2012 11:00 AM

Datumstempel

791248



### 5.6.3 Feedback from I&APs

The first phase public participation closed on 11 June 2012. Comments received are provided under Section 8. A letter was received from the Masenya Bakone tribe requesting a meeting. The secretary was contacted to determine what information they require and a request was sent to the Michael Angliss from Anglo Mogalakwena to provide a date and time for the meeting. A meeting was subsequently scheduled with the Masenya Bakone tribe.

### 5.6.4 Feedback to Stakeholders

Responses to comments that were received are given under Section 11. The secretary of the Masenya Bakone tribe was informed of the date and time for the requested meeting.

### 5.6.5 Notification of Key Stakeholders

Stakeholders are all the relevant authorities and land owners that may possibly be affected by the proposed fuel depot project. The following stakeholders were identified:

Table 11: Stakeholders identified during the PPP

Name	Organisation/Farm/Village	Postal Address	Contact details
<b>MAPELA TRADITIONAL COUNCIL</b>			
Mr. Chaba	GaChaba	Chaba Village Mapela 0610	Cell: 072 781 4458
Mr. Mabusela	Ga-Mabusela	Mmompma School P.O. Box 260 Mapela 0610	Cell: 073 455 0647
Mr. Koopedi	Mashlahleng	P.O. Box 841 Mapela 0610	Cell: 082 866 3869
Mr. Seema	Ga-Seema	252 Section A4 Mamelodi West 0122	Cell: 073 667 7125
Mr. Chokoe	Ga-Choeko	P.O. Box 75 Mapela 0610	Cell: 082 263 5589
Mr. Moses Mojela	Ga-Matopa	P.O. Box 144 Mapela 0610	Cell: 082 766 4113
Mr. Lelaka	Ga-Lelaka	P.O. Box 898 Mapela 0610	Cell: 073 208 4277
Mr. Matlou	Ga-Matlou	01014 Matlou section	Cell: 073 370 3740

		Mapela 0610	: 076 429 3337
<b>MOKOPANE TRADITIONAL COUNCIL</b>			
Mr. D.N. Masenya	Ga- Masenya	P.O. Box 1943 Mahwereleng 0626	Cell: 082 547 0480
Mr. M.M. Machikiri	Ga-Machikiri	Machikiri Primary School Mahwelereng 0626	Cell: 082 714 5028
Mr. J. Lekalakala	Masehlaneng	P.O. Box 1130 Mokopane 0600	Cell:078 127 4061
Mr. M.M. Lekalakala	Masodi	P.O. Box 3762 Mokopane 0600	Cell: 078 531 3132
Mr. Madiba James	Ga-Madiba	P.O. Box 1634 Mokopane 0600	Cell:082 631 7848
Mrs. Kekana Jeanette	Sekgakapeng	P.O. Box 1925 Segagateng Village 0651	Cell: 078 344 2776
Mr. M.J. Kekana	Ga-Kgubudi	P.O.Box 1171 Mahwereleng 0626	Cell: 072 789 3654
Mr. L.J. Mabusela	Sandsloot	P.O.Box 1935 Mahwereleng 0626	Cell:073 695 3078
Mr. L.L. Kgosana	Mountainview	P.O. Box 1954 Mahwereleng 0626	Cell: 076 600 0813
S.J. Lekalakala	Maroteng	P.O. Box 3708 Mokopane 0600	Cell: 072 909 0373
<b>MOGALAKWENA MUNICIPALITY</b>			
Ms. M. Mabusela	Speaker	P.O. Box 34 Mokopane 0600	Cell: 072 065 2969
Mr. S.W. Kekana	Municipal Manager	P.O.Box 34 Mokopane 0600	Cell: 083 554 3306
Mr. G. Hudson	Mogalakwena Fire Brigade	P.O.Box 34 Mokopane 0600	Tel: 015 491 9800
<b>NON PROFIT MAKING ORGANIZATION</b>			



Mr. G. Mamabolo	SA Red Cross- Mokopane Branch	56 Clerk Street Mokopane 0600	Cell: 072 280 5540
Mrs. E. de Wet	Mokopane Community Need Forum	P.O. Box 946 Mokopane 0600	Cell: 082 434 1711
Ms. M. Ledwaba	Mahwelereng Centre of Hope	P.O. Box 873 Mahwelereng 0626	Cell: 082 295 1076
Ms. S. Mogashoa	Thobela Centre for the Disabled	Postnet Suite # 232 Private Bag X2499 Mokopane 0600	Cell: 072 623 0532
Ms. G. Khalo	Ruta o Oke CHBC	P.O. Box 153 Mahwelereng 0626	Cell: 073 478 9782
<b>GOVERNMENT DEPARTMENTS</b>			
Station Commander (Colonel Jacobs Eddie Enslien)	Mahwelereng SAPS	P.O. Box 54 Mahwelereng 0626	Tel: 015 483 0320/5000
Station Commander	Mokopane SAPS	P.O. Box 27 Mokopane 0626	Tel: 015 409 1420
Station Commander (Captain Makatu)	Tin Mine SAPS	P.O. Box 2475 Mokopane 0600	Tel: 015 442 0611
Mr. G. Moetlo	Department of Health (District)	Postnet Suite 42 Private Bag X 9676 Polokwane 0700	Cell: 083 412 6581
Mokopane - Mr. Masango R.	Department of Agriculture	Private Bag X2455 Mokopane 0600	Cell: 072 291 7204
Kolani T.C. (ASD) Mine Environmental Management	Department of Mineral Resources	Private Bag X9467 101 Dorp Street Polokwane 0700	
Mr. A. Matukane (Chief Director)	Limpopo Department Of Water Affairs and Forestry	Private Bag X9506 Polokwane 0700	
Phillip Hine	SAHRA	The Chief Executive Officer South African Heritage Resources Agency P.O. Box 4637	



		Cape Town 8000	
Charles de Kock	Limpopo Department of Agriculture	Private Bag X9487 Polokwane 0700	
Tinyiko Malungani	LEDET	Cnr of Suid and Dorp Streets, Private Bag X9484 Polokwane 0700	
<b>PARASTATALS</b>			
Ms. D. Mahlobogoane	LIBSA-Mokopane	P.O. Box 14 Mahwelereng 0626	
Ms C. Lekalakala	Limdev- Mokopane	P.O. Box 760 Lebowakgomo 0737	

The following table lists the I&APs who registered and were added to the database of I&APs during the PPP:

*Table 12: Registered I&APs*

<b>Name</b>	<b>Farm/Association/ Tribe</b>	<b>Postal Address</b>	<b>Contact details</b>
Mrs. N.J Mothibi (Secretary)	Masenya Bakine	P.O. Box 2059 Mahwelereng 0626	Cell: 083 998 4901
Induna: Mrs. D.N. Masenya	Masenya Bakine	P.O. Box 2059 Mahwelereng 0626  P.O. Box 4465 Mokopane 0600	Cell: 082 547 0480/ 083 998 4901
Traditional Leader Mr. L.L. Kgosana	Mountain View Village	P.O. Box 1954 Mahwelereng 0626	
Kolani T.C.(ASD) Mine Environmental Management	Department of Mineral Resources	Private Bag X9467 101 Dorp Street Polokwane 0700	
Mr. A. Matukane (chief Director)	Limpopo Department Of Water Affairs and Forestry	Private Bag X9506 Polokwane 0700	

Phillip Hine	SAHRA	The Chief Executive Officer South African Heritage Resources Agency P.O. Box 4637 Cape Town 8000	
Charles de Kock	Limpopo Department of Agriculture	Private Bag X9487 Polokwane 0700	
Tinyiko Malungani	LEDET	Cnr of Suid and Dorp Streets, Private Bag X9484 Polokwane 0700	
Kobie Dippenaar			Email: dippenaark@mogalakwena.gov.za

### 5.6.6 Registering Stakeholders

Stakeholders were registered on a database for registered interested and affected parties. Certain people were automatically registered as I&APs due to their importance in providing comments on the application. This includes tribal councils, Departments and Organs of State.

### 5.6.7 Press Notices

A newspaper advertisement (given in the figure below) was placed in the Noordlike Nuus on 20 January 2012. The public participation period ended on 22 February 2012.





### 5.6.8 Placement of Public Notices

Public Notices were placed on site on 20 January 2012. The figures below show the site notices.



Figure 39: Notice boards placed on the road to the site



Figure 36: Notice boards placed on the road to the mine



Figure 38: Notice boards placed at the site



Figure 37: Notice boards placed at the mine entrance





Figure 41: Notice boards placed at the entrance to the mine



Figure 40: Notice boards placed on the way to the site

### 5.6.9 Issuing I&APs and Stakeholders with a Draft Scoping Report

Registered Interested and Affected Parties were sent an electronic copy of the draft scoping report. A letter accompanying the report requested them to send their written comments to Shangoni Management Services no later than 24 August 2012.

### 5.6.10 Comments on the Draft Scoping Report

No comments were received on the draft Scoping Report.

### 5.6.11 Consideration of the final Scoping Report

The final Scoping Report was submitted to the responsible officer at the Limpopo Department of Economic Development, Environment and Tourism for consideration on the 22<sup>nd</sup> of October 2012. The Department subsequently requested that an addendum to the final Scoping Report be submitted to address the following letter.







# LIMPOPO

PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

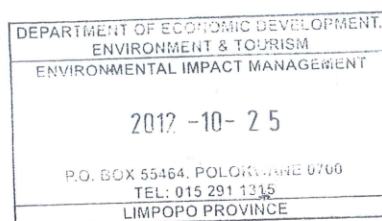
Enquiries: Malungani TP Tel: 015 290 7060 Fax: 015 295 5015 E-mail: [malunganitp@ledet.gov.za](mailto:malunganitp@ledet.gov.za)  
Project Reference Number: 12/1/9/2-W21 NEAS Reference Number: LIM/EIA/0000300/2011

Shangoni Management Services (Pty) Ltd  
P.O. Box 74726  
**LYNWOOD RIDGE**  
0040

Fax: 086 578 9670

Attention: Isabel Hough

Dear Madam,



**RE- APPLICATION FOR THE PROPOSED CONSTRUCTION OF AN UNDERGROUND FACILITY FOR THE STORAGE AND HANDLING OF DIESEL AT MOGALAKWENA PLATINUM MINE WITHIN MOGALAKWENA LOCAL MUNICIPALITY OF WATERBERG DISTRICT, LIMPOPO PROVINCE**

1. The above mentioned matter refers.
2. The Department acknowledges receipt of a final Scoping Report (SR) and the Plan of Study for Environmental Impact Reporting (PoSEIR) dated 12 October 2012, compiled by Shangoni Management Services (Pty) Ltd and submitted on 23 October 2012
3. The Department has reviewed the SR and made the following findings:
  - a) There is potential for soil and groundwater pollution from the proposed activities;
  - b) No clear indication of which specialist studies will be undertaken if necessary, and
  - c) No clear indication of the assessment processes that will be followed to enhance the Environmental Impact Assessment process to be undertaken;
4. In light of the above, the Department rejects the final scoping report with an option to amended it after having addressed *inter alia* the following:
  - a) Identify, if necessary, specialist studies required to address the potential environmental impacts identified;
  - b) All specialist studies identified must be undertaken by qualified specialist in the relevant field, and such specialist must also complete a declaration form as the requirements;
  - c) Fully describe all the potential impacts identified as well as the processes to be undertaken to ensure that those impacts are mitigated; and

**HEAD OFFICE**

20 Hans Van Rensburg Street / 19 Biccard Street, Polokwane, 0700, Private Bag X 9484, Polokwane, 0700  
(Switchboard) Tel: +2715 293 8300/8303/8367 Website: [www.ledet.gov.za](http://www.ledet.gov.za)

Received via  
post  
05/11/2012  
@Paul

**The heartland of southern Africa - development is about people!**

Figure 42: LEDET response to final Scoping Report (page 1)

- d) A detailed PoSEIR clearly indicating all the processes to be followed during the EIA process.

You are required to submit one (1) hard copy and one (1) CD of the amended final scoping report as mentioned above.

Please do not hesitate to contact this Department should have any queries in this respect.

Yours faithfully,



**M. NAGER**  
**ENVIRONMENTAL IMPACT MANAGEMENT**

DATE: 25/10/2012

Mogalakwena Platinum Mine

**Attention: Mick Angliss**

**Fax: 015 418 2018**




Figure 43: LEDET response to final Scoping Report (page 2)

An addendum to the final Scoping Report was submitted to the Limpopo Department of Economic Development, Environment and Tourism on the 7<sup>th</sup> of January 2013. The Department accepted the final Scoping Report and its addendum on the 7<sup>th</sup> of February 2013 (shown in the figures below).



7. FEB. 2013 14:25 NO. 495 P. 1/2



# LIMPOPO

**PROVINCIAL GOVERNMENT**  
REPUBLIC OF SOUTH AFRICA

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**DEPARTMENT OF  
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM**

Enquiries: Maiungani TP Tel: 015 290 7060 Fax: 015 295 5015 E-mail: [maiunganilt@ledet.gov.za](mailto:maiunganilt@ledet.gov.za)  
Project Reference Number: 12/1/9/2-W21 NEAS Reference Number: LIM/EIA/0000300/2011

Shangoni Management Services (Pty) Ltd  
PO Box 74726  
LYNNWOOD RIDGE  
0040

DEPARTMENT OF ECONOMIC DEVELOPMENT,  
ENVIRONMENT & TOURISM  
ENVIRONMENTAL IMPACT MANAGEMENT

2013-02-07


P.O. BOX 53431 POLOKWANE 0700  
TEL: 015 291 1315  
LIMPOPO PROVINCE

Fax: 086 578 9670  
Attention: Isabel Hough

Dear Madam

**RE PROPOSED CONSTRUCTION OF AN UNDERGROUND FACILITY FOR THE STORAGE AND HANDLING OF DIESEL AT MOGALAKWENA PLATINUM MINE WITHIN MOGALAKWENA LOCAL MUNICIPALITY OF WATERBERG DISTRICT, LIMPOPO**

1. The final Scoping Report (SR) dated 22 October 2012 and the addendum to final SR received by the Department on 07 January 2013 has reference.
2. The Department of Economic Development, Environment and Tourism (Department) has received final SR and the attached Plan of Study for Environmental Impact Assessment (PoSEIA) and addendum to final SR for the above-mentioned development on 22 October 2012 and 07 January 2013 respectively.
3. The Department accepts the final SR and PoSEIA; you may proceed with the EIA process in accordance with the tasks that are outlined in the PoSEIA as required by the EIA Regulations GNR. 543 of the National Environmental Management Act (Act 107 of 1998) as amended.
4. All the issues/ comments raised by the interested and affected parties during the public participation process must be adequately addressed.
5. Please note that no development must be undertaken prior to the Department granting an environmental authorisation to that effect. Non-compliance with the above will result in the relevant authority issuing a directive to address the non-compliance, including an order to stop the activity as well as instituting criminal and/or civil proceedings to enforce compliance.

Received via fax  
07-02-2013 

**HEAD OFFICE**

20 Hans Van Rensburg Street / 19 Biccard Street, Polokwane, 0700, Private Bag X 9484, Polokwane, 0700  
(Switchboard) Tel: +2715 293 8300/8303/8367 Website: [www.ledet.gov.za](http://www.ledet.gov.za)

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Figure 44: LEDET acceptance of final Scoping Report (page 1)

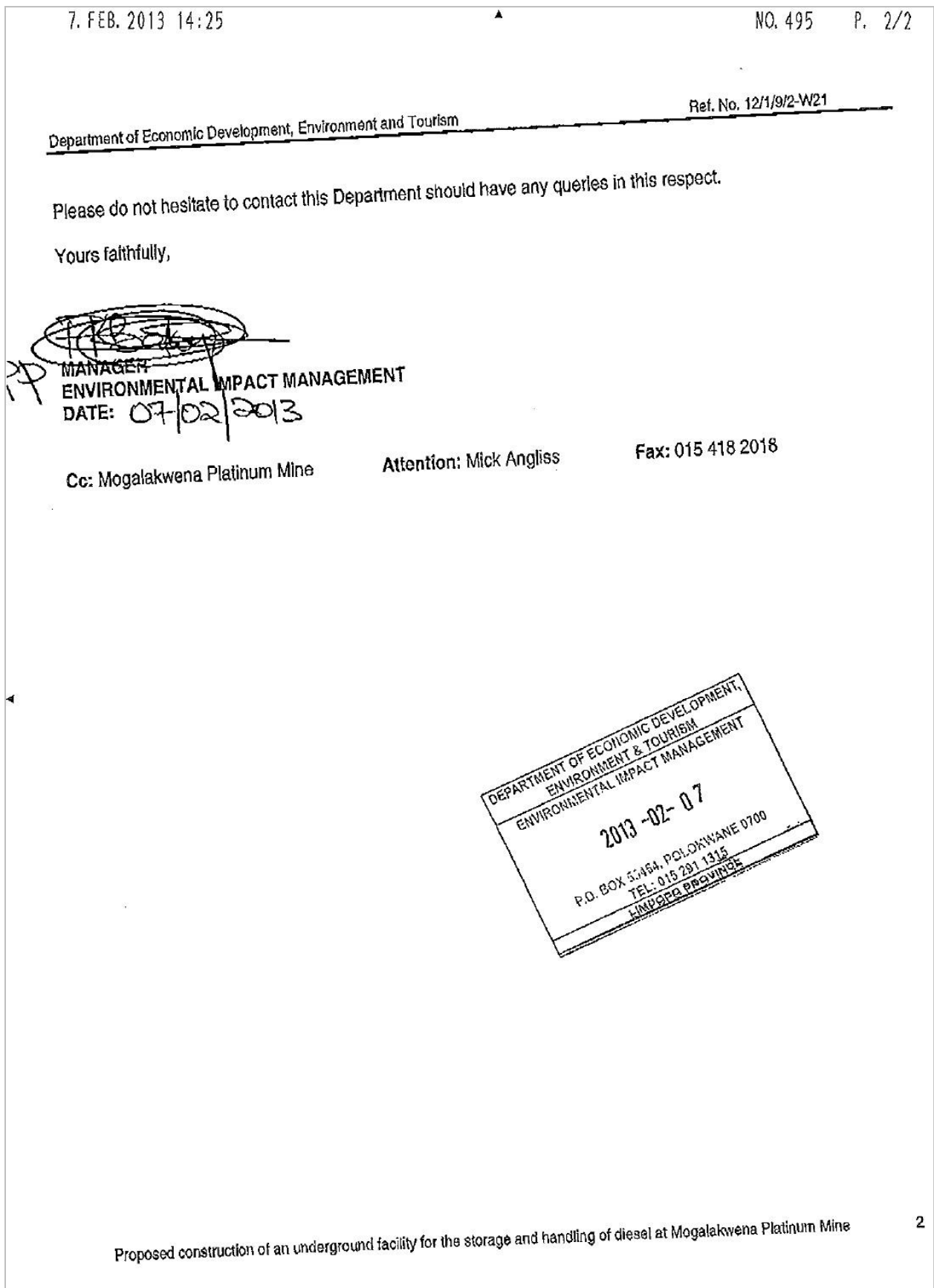


Figure 45: LEDET acceptance of final Scoping Report (page 2)



### **5.6.12 Issuing I&APs and stakeholders with the Draft Environmental Impact Assessment Report**

This draft Environmental Impact Assessment report will be sent, via registered mail, to all Departments and Organs of State as well as all registered I&APs in order to obtain their comments and notices. This report will also be submitted to the responsible officer at the Limpopo Department of Economic Development, Environment and Tourism.

### **5.6.10 Conclusions of the Public Participation Exercise**

In conclusion, the Public Participation exercise has provided adequate information to enable an understanding of what the proposed project would entail and also to address the concerns and comments of this Environmental Assessment.



## 6. NEED AND DESIRABILITY FOR THE ACTIVITY

### 6.1 Developer

The applicant, Anglo Platinum - Rustenburg Platinum Mines Limited, currently has authorisation for a temporary above-ground fuel storage facility. The applicant requires a permanent fuel storage facility (increased total fuel storage capacity), with additional workshops and service bays to ensure reliable provision of fuel.

### 6.2 Local Community

Dependency- and unemployment- rates are very high in the Mogalakwena Local Municipal area. Most of the people living in the communities adjacent to the mine are working at the mine and the construction and operational phases of the proposed activity will create additional employment opportunities for local residents. Unskilled laborers will be employed during the construction phase and the proposed storage facility will require two semi-skilled operators during the operational phase.



## 7. IDENTIFIED ALTERNATIVES

Typically, alternative assessments are conducted to assist in comparing various projects or attributes of projects that will occur. The most critical comparison is evaluating any proposed project against the No-Go option. The alternatives assessment then considers alternatives to project site selection for the proposed development, alternatives to layout of the development, and alternatives to construction methodologies and/or materials used for the development.

The alternatives assessment was conducted using a simple cost-benefit analysis of each proposed alternative, through assessing various environmental attributes. These attributes can include physical (geology and soils, surface water quality and quantity, groundwater quality and quantity); biophysical (flora and fauna, sensitive environments); and social (site of archaeological or cultural importance, land use issues, social health and welfare) issues.

The impact of the each alternative was then evaluated in terms of whether it has a positive, negative, or no impact. In this instance, the impact is not evaluated in terms of significance but rather whether or not it will arise. Positive impacts are assigned a value of 1; no impact a value of 0; and a negative impact a value of -1.

By adding all of the attribute scores for each alternative, a suitability score is derived which indicates the preferred alternative. A total positive score indicates the project benefits outweigh the potential negative impacts, while a total negative score indicates the project environmental costs outweigh the potential benefits. Essentially, the highest scoring alternative is then carried forward for full impact evaluation.

### 7.1 No-Go Option

The potential impact of the preferred project option on environmental and socio-economic attributes, identified during the assessment phase, is evaluated against the potential impact of the no-go option on the same attributes. The summary of this assessment is provided in the table below.

*Table 13: Development vs. No-Go Option*

Attribute	Development Option	No-go Option 2
<b>Physical environment</b>		
Air Pollution	-1	-1
Noise Pollution	-1	-1
Water Quality	0	-1
Water Quantity	0	0
Visual Aesthetics	0	0
<b>Biophysical environment</b>		

Fauna and Flora	0	0
Sensitive Environments	0	0
<b>Social environment</b>		
Traffic	-1	-1
Impact on property values	0	0
Safety and security	0	0
National and regional economy	1	0
Infrastructure development	1	0
<b>Total</b>	<b>-1</b>	<b>-4</b>

## 7.2 Alternatives to Site Selection

Two locations were identified where the permanent above-ground facility could be located within the boundaries of the mine. The preferred site is the location of the current temporary fuel storage facility. The alternative site is located west of the current temporary site (shown visually on the following figures). The site for the current temporary fuel storage facility is the preferred site as it will be financially and logistically easier to change the temporary facility into a permanent facility than to construct a new facility at the alternative site.





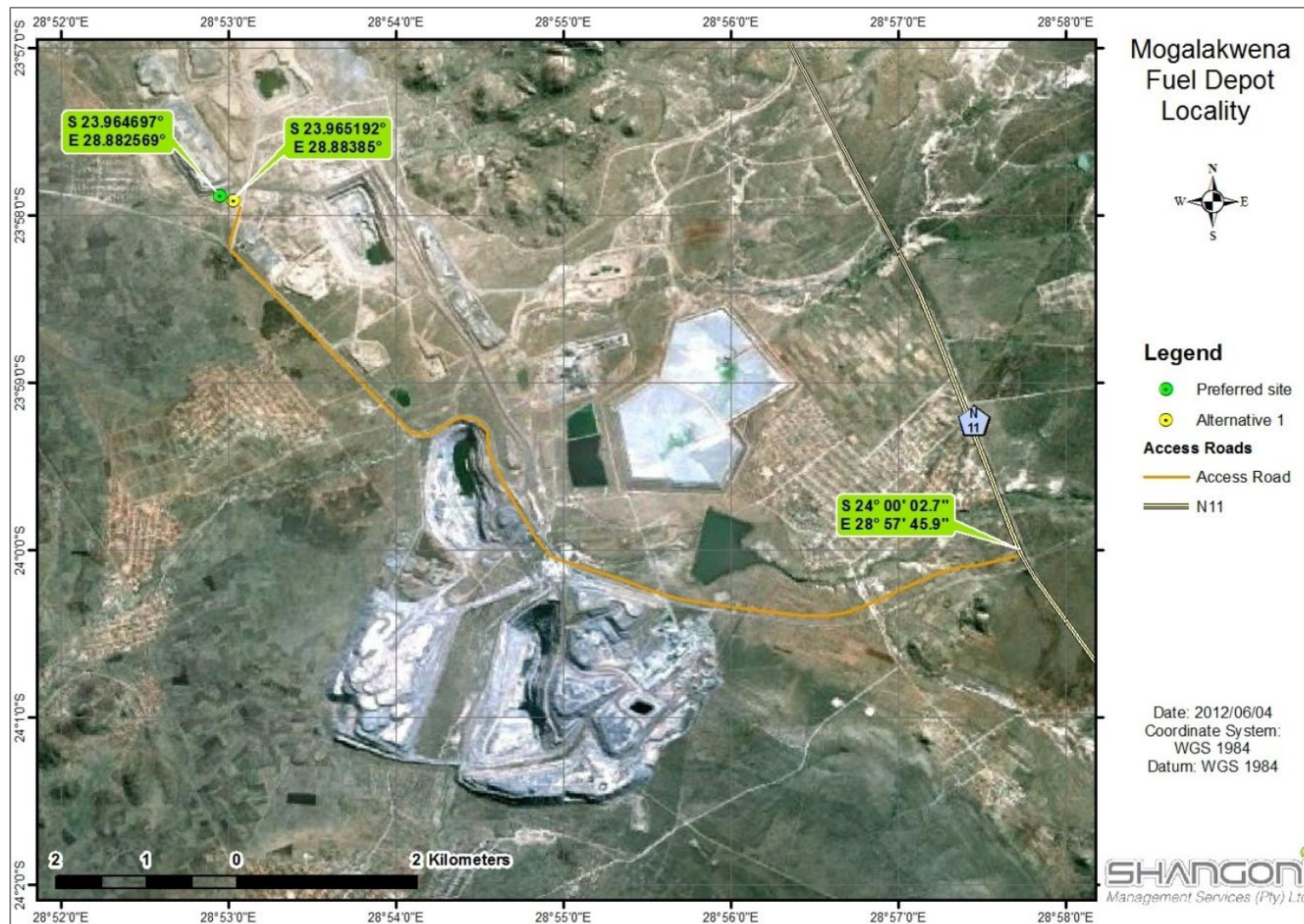




Figure 47: Location of the preferred site



Figure 48: Location of the alternative site



## **7.3 Construction Alternatives**

### **7.3.1 Alternative Design**

Design alternatives for a fuel storage facility are limited. The design will be in accordance with general guidelines for the storage of fuel.

### **7.3.2 Activity Alternatives**

The proposed activity is the storage of fuel for use at the mine. An alternative activity that will ensure a reliable fuel supply to the mine would be to have fuel delivered to the mine on a daily basis. This alternative would not be economically feasible and the proposed construction of a permanent fuel storage facility is therefore proposed.

### **7.3.3 Location Alternatives**

Two alternative locations have been considered for the fuel storage facility. Please refer to Section 7.2 for a full discussion of the alternatives.

### **7.3.4 Process Alternatives**

This is not an application for a specific process, but for a storage and maintenance facility. Therefore, no process alternative can be assessed.

### **7.3.5 Scheduling Alternatives**

It is recommended that construction take place during the drier months to avoid any complications in wet weather. No detailed information regarding the proposed time frame for the project is available yet, however it is anticipated that construction will start as soon as possible after all the necessary approvals have been obtained.

### **7.3.6 Input Alternatives**

There are no inputs to a process and therefore no alternatives could be considered for this application.



## 8. COMMENTS OBTAINED DURING THE PUBLIC PARTICIPATION PHASE

Table 14: Comments from interested and affected parties

Raised by	Date received	Issue / Comment / Concern
Kgosana L.L. - Mountain View Village	04-06-2012	<p><b>COMMENT ON PERMANENT FUEL STORAGE FACILITY AT THE MOGALAKWENA MINE</b></p> <p>Your letter dated 30 April 2012 regarding the above-mentioned matter, refers.</p> <p>Kindly note that the co-ordinates provided for the preferred and alternative locations, are not clear. In other words, the two locations are not properly marked on the Mogalakwena locality.</p> <p>You should have marked the two points boldly for ease of reference.</p> <p>I therefore reserve my comments until such time as the above are corrected, bearing in mind the proximity of settlements to the mine compound.</p>
Kobie Dippenaar	04-06-2012	Requested a map clearly showing the preferred and alternative sites.
Secretary N.J. Mothibi – Masenya's Kraal, Induna: D.N. Masenya	08-06-2012	<p>Request for Shangoni Management Services</p> <p>Due to your letter dated 30<sup>th</sup> April 2012 for your application of Environmental Authorisation for permanent fuel storage the stakeholders and traditional leaders would like to meet with you to discuss about your letter, here at gaMasenya village.</p> <p>May you please suggest the dates that will suit you?</p>



		We will be happy if our request could be highly taken into consideration.
Mrs. D.N. Masenya – Headman Masenya Bokone	30-07-2012	<ol style="list-style-type: none"> <li>1. Our community to have good health</li> <li>2. Working opportunities</li> <li>3. Adult basic training in education</li> <li>4. Skills for our community youth</li> <li>5. Access roads for our village</li> <li>6. Bridges for your people to cross Pholotji River</li> <li>7. Water supply for our village</li> </ol> <p>Thank you for everything From gaMasenya Village Sandsloot</p> <ol style="list-style-type: none"> <li>1. N.J. Mothibi</li> <li>2. D.N. Masenya</li> <li>3. J. Mahlaela</li> <li>4. N. Mothibi</li> <li>5. A. Maila</li> <li>6. S. Mogale</li> <li>7. L. Mokgotho</li> </ol>



## 9. PUBLIC MEETINGS

During the first phase of public participation, all adjacent landowners as well as other organs of state were notified of the project and given the opportunity to register as an interested and affected party. The Ga-masanya community requested a public meeting with the applicant and environmental assessment practitioner. This meeting was held on 21 June 2012 at 10h00 at the Ga-masanya community hall. A request was received during the meeting that delegates from the community would want to see where the fuel depot will be situated. A site visit with three designated community members took place on Thursday, 5 July 2012, during which they indicated that they have no objection to the proposed application.

The attendance register of the meeting on 21 June 2012 is given in the following figures:

Attendance Register Meeting with Masanya on 21/06/12 @ 10h00				
Name	Village Name Company Name	Designation	Tel/Cell	Sign
1 Salome Ramokolo	Ga-Masanya	ngoro	—	S.R
Hazel Mogale	Ga-masanya	ngoro	—	U.H. Mogale
2 Moya Moya	Ga masanya			Isaac
3 Urandimo Bizen	Ga masanya	kgoro	0733933670	Mogale
4 Mkoana Steven	Ga Masanya	kgoro	078150206	Sty
5 Mlabaya Rauben	Ga-Masanya	kgoro	—	Mlabaya
6 Justice Ledwaba	Ga Masanya	kgoro	—	Mlabaya
Mabasa Lunga	Ga Masanya	V.D.C	0749833513	Mlabaya
7 Simen Makhondo	Ga-Masanya	kgoro	0719809961	Mlabaya
8 Johannes NKOANA	Ga Masanya	kgoro	—	Mlabaya
9 Lebby RAPERWA	CDP	CDP	078643979	Mlabaya
10 Sammy Mngemo	VDC-water com/Chair	VDC	078 0009748	Mlabaya
11 STEPHEN MASANYA	Ga-Masanya	kgoro	—	Mlabaya
12 Joseph Motshela	Ga-masanya	kgoro	0792803131	Mlabaya

Figure 49: Attendance register page 1



Attendance Register  
Public Meeting - Mogalakwena  
Fuel Depot Project. (21 June '12 @ 14h00)

Name	Village Name / Company Name	Designation	Tel/Cell	Sign
3 Isabel Hough	Anglo Platinum	EAP	019 534 4303	[Signature]
14 Julia Ledwaga	Anglo Platinum	CEO Co-ordinator	083 4571564	[Signature]
15 Noah Moshibi	Masunya Council	Council	0721139633	[Signature]
16 Isaac Masenya	Masenya Council	Council	-	[Signature]
17 NANCY MASENYA	GA-MASENYA (INDUNA)	INDUNA	082 547 0480	N.Masenya
18 Moshibi N. Johanna	GA-MASENYA	COUNCIL SECRETARY	083 998 4901	[Signature]
19 Mubvumba Johannes	Masenya Village	Council Agere	076 671 3688	[Signature]
20 Makgatho Lawrence	Ga Masenya Council	L.K. Makgatho	076 198 0070	[Signature]
21 Maria ALRED	Ga-MASENYA	Council	083 890 0103	[Signature]
22 Francina Lepadima	GA-MASENYA	V.B.C	083 725 1162	[Signature]
23 John nyopepe	ga-masenya	Kgoro	-	[Signature]
24 Appleton Lunga	ga-masenya	Water Committee	070 545 0001	[Signature]
25 Tuis Langa	GA-MASENYA	Kgoro	0727555885	[Signature]
26 Solomon Mollatla	GA-MASENYA	Kgoro	0793357620	[Signature]
27 Patric Moshibi	GA-MASENYA	Kgoro	-	[Signature]
28 Ennt seoma	GA-MASENYA	V.B.C	0724696435	E. seoma

Figure 50: Attendance register page 2

Attendance Register - Public Meeting  
Fuel Depot EIA 21 June 2012 @ 14h00

Name	Village Name / Company Name	Designation	Tel/Cell	Sign
29 Beverly Rafapa	Ga Masenya	Kgoro	0762905489	[Signature]
30 Mofomme Jo	ga masenya	VOC	0721532112	[Signature]
31 Elizabeth Mkhana	Ga masenya	Kgoro	-	[Signature]
32 Constance Lepadima	ga Masenya	Kgoro	-	[Signature]
33 Salome Matlala	GAMASENYA	Kgoro	-	[Signature]
34 Francina Lepadima	ga masenya	Kgoro	-	[Signature]
35 JANE SIKHOLE	GAMASENYA	Kgoro	-	[Signature]
36 Anna marakalala	Ga masenya	Kgoro	0725324620	A.MARAKALALA
37 DAVID MOTHIBA	GAMASENYA	Kgoro	-	D.MOTHIBA
38 Violet Konaize	Ga Masenya	Kgoro	0722008192	V. Konaize
39 MARGARET MOGALE	Ga MASENYA	Kgoro	-	M. Mogale
40 Basina marakalala	GAMASENYA	Kgoro	0112793552	B. marakalala
41 MOLE Lango	Ga-MASENYA	Kgoro	0787822555	[Signature]
42 Kekema SAM	11	Kgoro	-	[Signature]
43 Rudolph Matlala	11	Kgoro	0724662388	R. Ma
44 Joyce Langa	11	Kgoro	-	J.L

Figure 51: Attendance register page 3



Attendance Register - Meeting Masenya  
on 21 June 2012 @ 18h00.

Name	Village Name Company Name	Designation	Tel / cell	Sign
10 KENNETH MOKGATA	Ga. Masenya	All RPP	0711404261	<i>[Signature]</i>
11 WILLIAM MASENYA	Youth Ga. Masenya	Youth	0790119316	<i>[Signature]</i>
12 FRANK MASHINI	Ga. Masenya		0786280588	
13 THOMAS MHOA	Ga. Masenya	All the	0795724801	<i>[Signature]</i>
14 MELINDA PELLER	Ga. Masenya	Peller	0762976871	<i>[Signature]</i>
15 JULIA MATHELA	Ga. Masenya	Jmathele	0791510008	<i>[Signature]</i>
16 JOHANNES MIMYUKU	Ga. Masenya	M. S. Masenya	0855818631	<i>[Signature]</i>
17 MAGDELINE MASENYA	Ga. Masenya	M. S. Masenya	0731694317	<i>[Signature]</i>
18 MAGGIE MALAPELE	Ga. Masenya	M. M. Malapele	073-511-5111	<i>[Signature]</i>
19 IDUN MABUENA	Ga. Masenya	I. Mabunda	0731002081	<i>[Signature]</i>
20 ELSIE KGOMO	Ga. Masenya	E. Kgomo	0790105964	<i>[Signature]</i>
21 JOHANN LEPADIMA	Ga. Masenya	Johanna lepadima	082 2925602	<i>[Signature]</i>
22 ALBERT MABOYA			0794217734	<i>[Signature]</i>
23 ELIAS LEGOMBE	Ga. MASENYA	EE		
24 PETER MASHINI	Ga. Masenya		0743772190	
25 LESLIE GREGORY MASHINI	Ga. Masenya	Community member	0840834548	<i>[Signature]</i>

Figure 52: Attendance register page 4

Attendance Register  
Masenya 21 June @ 10h00

Name	Village Name	Designation	Tel / cell	Sign
10 LETHU MOKGATA	Ga. Masenya	Youth	0712374431	<i>[Signature]</i>
11 PETER LUNYI	Luleso	ADULT	0829681014	<i>[Signature]</i>
12 PAULA	Leso			
13 ELUS	Leso			
14 JOSEPH KHUMALO	Ga. Masenya	Member	0835429971	<i>[Signature]</i>
15 WILLIAM MASENYA	Ga. Masenya	Kgoro		<i>[Signature]</i>
16 JAMES MASHINI	Masenya	Kgoro		
17 KYDIA MATHELI	L. Masenya	Ga. Masenya	0731694317	<i>[Signature]</i>
18 ABAN MASHINI	Ga. Masenya	R. M.	0731694317	<i>[Signature]</i>

Figure 53: Attendance register page 5

Main concerns raised during the meeting are summarised below (for the full meeting minutes please see Annexure 4.7):

Table 15: Meeting Minutes

Question / Comment	Response
Can the mine assist the community to establish an environmental educational programme for the youth of the community?	It was indicated that this request will be communicated to the mine and they will come back to the community regarding their request and how the mine may or may not be able to assist them with an environmental educational program for the community.



<p>What will the community benefit from this fuel storage facility and maintenance area?</p>	<p>It was indicated that the proposed permanent facility will be located at the same location as the current temporary facility. The benefit that the community can get out of this facility being made permanent (including workshops and extra storage infrastructure) is the possibility of work opportunities arising from the upgraded facility. For them to take advantage of that, they must visit the human resource office of the mine and apply once the jobs have been advertised in the newspapers.</p>
<p>They requested that the mine assist them with access roads, due to the fact that the current access roads are extremely damaged.</p>	<p>It was indicated that this request will be send through to the mine for consideration.</p>
<p>The mine must give the youth of the community skills development training.</p>	<p>It was indicated that the mine has been involved in numerous skills development workshops and training sessions and will continue do to so. They should go to the mine and sign up to be eligible for acceptance into a skills training program.</p>
<p>The mine must employ their youth.</p>	<p>The mine cannot employ everyone surrounding the mine as it only has a certain number of jobs and once all the jobs are filled they cannot employ additional people, unless new project arise and new jobs are created through these projects.</p>
<p>They indicated that they would like the mine to provide them with RDP houses because they saw that there are many surrounding communities that will get RDP houses, but not them.</p>	<p>It was explained that RDP projects are not part of the mines jurisdiction. This is the work of the municipality and that the community must speak to the municipality regarding RDP houses.</p>
<p>The community wants the mine to assist them in projects that they want to embark on in the future.</p>	<p>The suggestion was made that they prepare suggestions for project that the community want to undertake and then present them to the mine to enable the mine to consider their suggestion and determine if and where the mine will be able to assist.</p>



## 10. LANDOWNERS CONSENT

The landowner has received a letter from Shangoni Management Services informing him of the application for the permanent above-ground fuel storage facility and associated infrastructure, such as workshops. An acknowledgement of receipt was signed by the landowner stating that he received the information regarding the fuel storage facility and that he gives his consent to the mine to proceed with the application (shown in the figure below).




**ACKNOWLEDGEMENT OF RECEIPT OF THE LANDOWNER  
NOTIFICATION FOR THE PROPOSED FUEL DEPOT EIA APPLICATION**

LANDOWNER NAME: Mr. David Langa  
TRIBE NAME: Langa Stam TRibe  
  
PROPERTY DESCRIPTIONS: Portion 0 Zwartfontein 818 LR  
Portion 0 Overysel 615 LR

CONTACT DETAILS OF LANDOWNER  
TEL :015 417 0036  
FAX :015 417 0036  
CELL :082 219 2151  
E-MAIL : [kgoshi.Langa@mapela.co.za](mailto:kgoshi.Langa@mapela.co.za)

POSTAL ADDRESS: P.O. Box 158  
Mapela  
0610

I Kyochi Kwabagare David Langa hereby acknowledge receipt of the notification letter from Shangoni Management Services regarding the application for environmental authorization for the proposed Anglo Platinum Mogalakwena Mine fuel depot and confirm that I give my consent to Anglo to continue with the application for the fuel depot on the above mention properties.

SIGNATURE :   
SIGNED AT : MAPELA  
DATE : 09/03/2012

OFFICIAL TRIBE STAMP

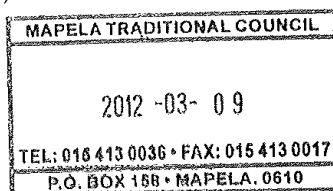


Figure 54: Acknowledgment of receipt of the Landowner notification for the proposed fuel depot EIA Application



## 11. EAP's RESPONSES TO COMMENTS RECEIVED

Raised by	Date received	Response
Kgosana L.L. - Mountain View Village	04-06-2012	Comments noted. The alternatives are indicated on Figure 3 of this report.
Kobie Dippenaar	04-06-2012	A map was sent via email showing the preferred and alternative site locations. A Google Earth link was also sent.
Secretary N.J. Mothibi – Masenya's Kraal, Induna: D.N. Masenya	08-06-2012	Comments noted. A meeting was scheduled with the community and held on the 21 <sup>st</sup> of June 2012.
Mrs. D.N. Masenya – Headman Masenya Bokone	30-07-2012	<ol style="list-style-type: none"> <li><b>1. Our community to have a good health</b> Mogalakwena Mine is ensuring that the community health is given priority and keep on monitoring all its activities that may have an effect on the health of community.</li> <li><b>2. Working opportunity</b> Working opportunities are open for every individual who meet minimum requirements and those who are looking for jobs are using the services of labour desk which is convenient next to the mine's South Concentrates.</li> <li><b>3. Adult basic Training in education</b> ABET is available and open to individuals who are willing to attend for free and the mine further make transport available free of charge.</li> <li><b>4. Skills for community youth</b> Skills are offered to community members and youth from Ga Masanya have already attended the Portable skills in 2012 with consideration going forward.</li> </ol>



		<p><b>5. Access road to the community</b> Mogalakwena Mine would like to advise you to approach Mogalakwena Municipality as their field of responsibility.</p> <p><b>6. Bridges for our people to cross Pholotji river</b> Mogalakwena Mine would still like to advise you to approach Mogalakwena Municipality as their field of responsibility.</p> <p><b>7. Water supply for our village Municipality</b> Mogalakwena Mine would still like to advise you to approach Mogalakwena Municipality as their field of responsibility.</p>
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Table 16: Environmental impact assessment parameters

Parameters	Description
Extent	Refers to the physical or geographical size that is affected by the impact. It can be categorised into the following ranges: <ul style="list-style-type: none"> <li>Onsite – Within specific site boundary (weight value – 1)</li> <li>Local – Within municipal boundary (weight value – 2)</li> <li>Regional – Outside municipal boundary (weight value – 3)</li> </ul>
Duration	Time span associated with impact: <ul style="list-style-type: none"> <li>Short term – 1 Year or less (weight value – 1)</li> <li>Medium term – 1-5 Years (weight value –2)</li> <li>Long term – Longer than 5 Years (weight value – 3)</li> </ul>
Intensity and reversibility	The severity of an impact on the receiving environment: <ul style="list-style-type: none"> <li>Low – Natural and/or cultural processes continue in a modified way and is reversible (weight value – 1)</li> <li>Medium – Natural and/or cultural processes stop and is partially reversible (weight value – 2)</li> <li>High – Natural and/or cultural processes disturbed to an irreversible state (weight value – 3)</li> </ul>
Significance of Impact / Consequence	Adding the extent, duration and intensity together provides the significance of the impact (High, Medium or Low). <b>Extent + Duration + Intensity = High/Medium/Low Impact</b>
Probability	The likelihood of an impact occurring: <ul style="list-style-type: none"> <li>Unlikely – 0% - 45% chance of the potential impact occurring (weight value – 1)</li> <li>Possible – 46% - 75% chance of the potential impact occurring (weight value – 2)</li> <li>Likely - &gt;75% chance of the potential impact occurring (weight value – 3)</li> </ul>
Environmental Risk Refer to the table below	Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment. <b>High/Medium/Low Impact X Probability = High/Medium/Low Environmental Risk</b>



Table 17: Environmental Risk Matrix

		Significance of Impact		
		Low Impact (3 → 5)	Medium Impact (6 → 8)	High Impact (9)
Probability	Definite / Very Likely 3	9 - 15 L - M	18 - 24 M - H	27 H
	Possible 2	6 - 10 L - M	12 - 16 M	18 M - H
	Unlikely 1	3 - 5 L	6 - 8 L	9 L
ENVIRONMENTAL RISK		Guidelines for Control Strategies		
(H) - High		Proactively reduce risk level, short term response.		
(M- H) Medium to High		Proactively reduce risk level, short term response.		
(M) – Medium		Management strategies to reduce risk level, short to medium term response.		
(L – M) Low to Medium		Management strategies to reduce risk level, short to medium term response, operational control and housekeeping.		
(L) - Low		Operational control and housekeeping.		



## 12. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

### 12.1 Introduction and approach followed

The proposed fuel storage facility can have a variety of impacts. These can occur over different spatial and temporal scales. The nature of each impact can also vary widely depending on the physical environment and the perceptions and values of the affected parties. In general, the environmental impacts associated with the proposed development will tend to decrease with increasing distance from the activity. The most noticeable impacts are therefore present on the site of operation or on adjacent properties. An assessment of the potential impacts on the social and natural environment should be conducted in a methodical manner.

Assessment and evaluation of environmental impacts is often complicated by the subjective nature of the impacts. Ideally, the degree of severity or significance of a particular impact should be expressed in quantitative terms. There must also be some expression as to whether a particular impact is desirable or not. As the desirability of an impact will depend largely on the attitude and experience of the assessment practitioner, subjectivity is unavoidable. To address these problems, a standard set of definitions were used for the entire impact assessment process.

It is believed that the approach followed will adequately fulfill the environmental authorities' requirements, the requirements of the EIA Regulations (2010) and the objectives of the environmental best practice, so as to ensure transparency and to enable an informed decision regarding the proposed project.

### 12.2 Methods used to identify impacts

Impact assessments should be conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;
- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

In broad terms, the impact assessment for this project included the following:

- All potential impacts of the proposed activity were identified and assessed;
- The nature, extent, magnitude and duration of all potentially significant impacts were predicted;
- A range of mitigation measures that could diminish the impacts were identified; and





- The significant of residual impacts that remain, after the proposed mitigation measures are implemented, were evaluated.

The construction and operational phases of the project were considered whilst identifying impacts. A detailed understanding of the proposed activity was obtained to ensure that all the potential impacts could be identified. The following process was followed to identify and assess the potential impacts of the proposed activity:

- The current environmental conditions were determined in detail. This acted as a baseline against which impacts could be identified and measured;
- The changes that will occur in future, should the proposed activity not occur, were identified;
- A detailed understanding of the activity was obtained in order to fully understand its consequences; and
- The significant impacts that will occur as a result of the proposed activity were identified (should the activity be authorised).

After all impacts were identified, the nature of each impact could be predicted. The impact prediction took into account physical, biological, socio-economic and cultural information and the likely parameters and characteristics of the impacts were then estimated. The aim of the impact prediction was to provide a basis from which the significance of each impact could be determined and appropriate mitigation measures could be developed. The impact prediction took into account the following parameters (summarised in the table below):

- The extent of the impact. This refers to the physical or geographical size that is affected by the impact and is divided into the following categories:
  - Onsite: Within the specific site boundary;
  - Local: Within the municipal boundary; and
  - Regional: Outside of the municipal boundary.
- The duration of the impact. This refers to the time span associated with the impact and is divided into the following categories:
  - Short term: An impact lasting for one year or less;
  - Medium term: An impact lasting for one to five years; and
  - Long term: An impact lasting for more than five years.
- The intensity and reversibility of the impact. This refers to the severity of the impact on the receiving environment and is divided into the following categories:
  - Low: Natural and/or cultural processes continue in a modified way and the impact is reversible;
  - Medium: Natural and/or cultural processes stop and the impact is partially reversible; and
  - High: Natural and/or cultural processes are disturbed to an irreversible state.

A weighting value is assigned to each parameter category, with the value increasing as the impact becomes higher. For example, an impact that is of short duration will have a lower weighting value than one that is of longer duration.



To determine the significance of an impact, the weighting values for its extent, duration and intensity are added together (Extent + Duration + Intensity = High / Medium / Low Impact). Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment (the “environmental risk”). To determine the probability or likelihood of an impact occurring, the following categories are used:

- Unlikely: There is a 0% - 45% chance of the potential impact occurring;
- Possible: There is a 46% - 75% chance of the potential impact occurring; and
- Likely: There is a greater than 75% chance of the potential impact occurring.

The environmental risk of an impact is plotted in a matrix, shown in Table 18. Assigning a colour to the environmental risk provides a clear and immediate visual representation of the magnitude of the risk of an impact on the environment.

Table 18: Environmental impact assessment parameters

Parameters	Description
Extent	Refers to the physical or geographical size that is affected by the impact. It can be categorised into the following ranges: <ul style="list-style-type: none"> <li>• Onsite – Within specific site boundary (weight value – 1)</li> <li>• Local – Within municipal boundary (weight value – 2)</li> <li>• Regional – Outside municipal boundary (weight value – 3)</li> </ul>
Duration	Time span associated with impact: <ul style="list-style-type: none"> <li>• Short term – 1 Year or less (weight value – 1)</li> <li>• Medium term – 1-5 Years (weight value –2)</li> <li>• Long term – Longer than 5 Years (weight value – 3)</li> </ul>
Intensity and reversibility	The severity of an impact on the receiving environment: <ul style="list-style-type: none"> <li>• Low – Natural and/or cultural processes continue in a modified way and is reversible (weight value – 1)</li> <li>• Medium – Natural and/or cultural processes stop and is partially reversible (weight value – 2)</li> <li>• High – Natural and/or cultural processes disturbed to an irreversible state (weight value – 3)</li> </ul>
Significance of Impact / Consequence	Adding the extent, duration and intensity together provides the significance of the impact (High, Medium or Low). <b>Extent + Duration + Intensity = High/Medium/Low Impact</b>
Probability	The likelihood of an impact occurring: <ul style="list-style-type: none"> <li>• Unlikely – 0% - 45% chance of the potential impact occurring (weight value – 1)</li> </ul>



	<ul style="list-style-type: none"> <li>• Possible – 46% - 75% chance of the potential impact occurring (weight value – 2)</li> <li>• Likely - &gt;75% chance of the potential impact occurring (weight value – 3)</li> </ul>
<p>Environmental Risk Refer to Table 19 below</p>	<p>Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment.</p> <p><b>High/Medium/Low Impact X Probability = High/Medium/Low Environmental Risk</b></p>



Table 19: Environmental Risk Matrix

		Significance of Impact		
		Low Impact (3 → 5)	Medium Impact (6 → 8)	High Impact (9)
Probability	Definite / Very Likely 3	9 - 15 L - M	18 - 24 M - H	27 H
	Possible 2	6 - 10 L - M	12 – 16 M	18 M - H
	Unlikely 1	3 - 5 L	6 – 8 L	9 L
ENVIRONMENTAL RISK		Guidelines for Control Strategies		
(H) - High		Proactively reduce risk level, short term response.		
(M- H) Medium to High		Proactively reduce risk level, short term response.		
(M) – Medium		Management strategies to reduce risk level, short to medium term response.		
(L – M) Low to Medium		Management strategies to reduce risk level, short to medium term response, operational control and housekeeping.		
(L) - Low		Operational control and housekeeping.		

## 12.3 Processes undertaken to ensure that impacts are mitigated

Mitigation measures were identified to ensure that impacts from the proposed activity are reduced as far as possible. The following mitigation measures objectives were kept in mind while the mitigation measures were identified:

- To find more environmentally sound ways of undertaking specific activities;
- To enhance any environmental and social benefits of a proposed activity;
- To avoid, minimise or remedy negative environmental impacts; and
- To ensure that any residual negative environmental impacts are environmentally acceptable.

Identifying appropriate mitigation measures were conducted in a hierarchal manner:

1. Preventative measures were identified to avoid, where possible, negative impacts that may arise as a result of the proposed activity;
2. Measures were identified to minimise and/or reduce the negative impacts to “as low as practicable” levels; and



3. Measures were identified to compensate or remedy residual negative impacts that are unavoidable and cannot be minimised or reduced any further (Department of Environmental Affairs, 2006).

Proposed mitigation measures will be communicated to the applicant for review. The applicant will comment on the feasibility and practicability of implementing the mitigation measures. The mitigation measures may be adjusted based on the applicant's comments.

## 12.4 Environmental Impact Assessment

All activities related to the proposed fuel storage facility that could have some impact on the environment were identified. These impacts can be of environmental, socio-economic or cultural nature. Impacts are often not only confined within the direct scope of the proposed activity and can accumulate as a network of indirect impacts on the surrounding area.

Different impacts are associated with the construction and operational phases of the proposed activity. The suitability and feasibility of all proposed mitigation measures are included in the assessment of significant impacts. This was achieved through comparison of the significance of the impact before and after the proposed mitigation measure is implemented.

### 12.4.1 Environmental Impact Assessments – Preferred Site

#### Design and Pre-Construction Phase

Table 20: Environmental risk assessment: Design and planning

Activity: Design and planning of the proposed fuel depot.	
Aspect: Inadequate planning and design.	
Nature of Environmental Impact: Impacts on the environment that could potentially have been avoided.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>14</b>
Objective of Mitigation Measures	
To effectively plan and design the fuel depot taking the onsite environment into consideration.	
Proposed Mitigation	
<ul style="list-style-type: none"> <li>• Site selection for the proposed fuel depot must include consideration of the following: <ul style="list-style-type: none"> <li>▪ The slope of the ground in relation to risk areas, such as residential areas.</li> <li>▪ Access to and from the proposed site.</li> <li>▪ The location of nearby drainage systems.</li> <li>▪ Available water supplies.</li> <li>▪ Fire protection services and their reaction times. Security and general service facilities in the area.</li> <li>▪ Population densities of the surrounding areas.</li> <li>▪ Future expansions (if applicable).</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>▪ General housekeeping practices at the mine.</li> <li>▪ The depth of the water table (if this is above the first impermeable layer) and the measurement date.</li> <li>▪ Soil types down to the first impermeable layer and the reduced level of the impermeable layer over the site.</li> <li>▪ The location of boreholes, artisan wells and aquifers within 500m of the site. An analysis must be done for hydrogen sulphide and hydrocarbons in the water.</li> <li>▪ The above listed information must be recorded before the construction at the site commences and should be used for future monitoring purposes.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

## Construction Phase

Table 21: Environmental risk assessment: Site clearance and construction activities

Activity: Site clearance, removal and relocation of existing temporary fuel depot facilities (e.g. fuel tanks), and construction activities.	
Aspect: Lack of environmental knowledge amongst workers and contractors.	
Nature of Environmental Impact: Harm to the environment due to workers or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent harm to the environment through the actions of uneducated workers or contractors.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Before any construction takes place the proposed area for the fuel depot will be pegged out. All construction activities will be limited to these areas in order to reduce the footprint of the proposed activity.</li> <li>• Construction areas should be fenced off or barricaded prior to and during construction.</li> <li>• Site clearing is to be limited to only the area necessary for carrying out the specified works.</li> <li>• The contractor is to draw up a plan for submission to the ECO and the site manager indicating the locations of construction infrastructure including the site-camp, equipment cleaning pits, toilets, stores, site office, and “no-go” areas.</li> <li>• The “no-go” areas are to be demarcated with a wire and danger-tape temporary barrier fence attached to planted posts (wooden or metal) at a minimum. This can be in the form of two strands of wire 500mm apart on droppers of 3m spacing, with danger tape zigzagged between the wires.</li> <li>• The contractor is to ensure that all employees, including sub-contractors and their employees, attend on-site Environmental Awareness Training prior to commencing work on site.</li> <li>• Employees, including sub-contractors, must be trained to operate specific equipment.</li> <li>• Follow-up Environmental Awareness Training may be required from time to time as new subcontractors or crews commence work or for specific activities that may potentially impact the environment, or if work is being undertaken in sensitive environments.</li> <li>• The contractor is to maintain accurate records of any training undertaken.</li> <li>• Training is to cover all aspects of the EMP, procedures to be followed, the sensitivity of the site and importance of adhering to “no-go” areas.</li> </ul>	

<ul style="list-style-type: none"> <li>• The ECO shall monitor the contractor’s compliance with the requirement to provide sufficient environmental awareness training to all site staff.</li> <li>• Environmental signage is to be displayed on the site including – “no smoking”, “fire hazards”, etc.</li> <li>• Emergency numbers are to be clearly displayed.</li> <li>• Construction workers must adhere to Health, Safety and Environmental procedures at the mine.</li> <li>• All construction workers shall be issued with ID badges and clearly identifiable uniforms.</li> <li>• All construction workers shall be transported to and from site on a daily basis.</li> <li>• Workers shall remain on the site at all times during the work day and no one will be allowed to leave site by foot, not even during break times.</li> <li>• Night watchmen are to be provided with adequate cooking and heating facilities (no open fires), a suitable method of disposing of wastewater, and access to communication equipment.</li> <li>• Access to fuel and other equipment stores is to be strictly controlled.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 22: Environmental risk assessment: Stockpiling

Activity: Stockpiling of subsoil.	
Aspect: Incorrect subsoil stockpiling.	
Nature of Environmental Impact: Erosion of stockpiles and cleared areas.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To ensure proper stockpiling and prevent the erosion of cleared areas.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Subsoil must be stockpiled in a designated area or areas.</li> <li>• The contractor is to ensure that all reasonable measures are taken to limit erosion and sedimentation from construction activities. Erosion protection measures include cut-off drains and/or berms.</li> <li>• Removed subsoil and rocks must be used for rehabilitation once the construction has been completed. This could include infilling and leveling of the ground.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 23: Environmental risk assessment: Fire establishment

Activity: The transformation of the current temporary fuel depot into a permanent facility.	
Aspect: Construction practices that create a fire risk.	
Nature of Environmental Impact: Fire and/or explosion of flammable substances.	
<b>Before Mitigation</b>	

Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent the occurrence of fires and/or explosions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Fire-fighting equipment must be available at the construction site.</li> <li>• Flammable materials are to comply with standard fire safety regulations.</li> <li>• Equipment is to be maintained in good working order to the satisfaction of local fire authorities.</li> <li>• Smoking is prohibited at the construction site. Notices are to be prominently displayed prohibiting smoking this area.</li> <li>• Welding, flame cutting and other hot work may not occur in close proximity to any fuel or oil tanks and may only be undertaken in places where the necessary safety precautions are in place (i.e. with a fire extinguisher immediately accessible).</li> <li>• Fuels and flammable materials are to be handled in a safety conscious manner.</li> <li>• All fuels and flammable materials are to be stored safely and clearly labeled.</li> <li>• Safety signage including “No Smoking”, “No Open Flames”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed on fuel stores and tanks.</li> <li>• All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids and drip trays.</li> <li>• Storage areas for fuels and flammable materials are to comply with standard fire safety regulations.</li> <li>• All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).</li> </ul> <p><b>Removal/relocation of the temporary diesel depot</b></p> <ul style="list-style-type: none"> <li>• Should gas-freeing be undertaken once the storage tanks have been emptied, all possible sources of ignition must be removed from the area and persons must keep clear of the bund- and downwind- areas. Gas-freeing operations must be supervised by a designated person.</li> <li>• The following gas-freeing method is proposed for above-ground horizontal tanks: <ul style="list-style-type: none"> <li>▪ The tanks must be drained as far as possible.</li> <li>▪ All pipelines must be disconnected and blanketed off. All apertures must be fully opened.</li> <li>▪ The manhole covers must be removed and water must be used as a flushing medium.</li> <li>▪ Ventilation can be assisted through mechanical means or a wind-sail.</li> </ul> </li> </ul> <p><b>Installation of the fuel depot</b></p> <ul style="list-style-type: none"> <li>• Fire-fighting equipment must be installed and painted red (A11 signal red or A14 poppy red). Water requirements must be calculated based on a full risk assessment conducted by an engineer.</li> <li>• Fire-fighting equipment should include fire extinguishers at regular intervals in the field service bay and re-fuelling area. At the diesel and oil storage tanks, a fire fighting system must be installed. This could include water lines and a sprinkler system above the storage tanks. Fire-fighting equipment must be accessible from different directions and must be clearly marked using reflective materials to enable visibility at night.</li> <li>• The storage tanks must be installed with minimum safety distances and levels of protection as stipulated in SANS 10089-1:2008 and must be arranged so that firefighting can be carried out effectively with mobile and stationary fire-fighting equipment.</li> <li>• Access roads or corridors to fire-fighting equipment must be unobstructed.</li> <li>• The minimum distance between a tank and the toe of the inside bund wall should be at least 1.5m.</li> <li>• All tanks must have approved emergency venting that will relieve excessive internal pressure in the event of fire exposure. The venting capacity shall be in accordance with an approved standard, such as API Std 2000.</li> </ul>	
<b>After Mitigation</b>	



Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 24: Environmental risk assessment: Cement and concrete

Activity: The storage, mixing and disposal of cement and concrete.	
Aspect: Concrete and cement spillages.	
Nature of Environmental Impact: Water- and/or soil- pollution.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of soil and water as a result of concrete and cement used on site.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>No mixing of concrete or cement directly on the ground is permitted. The mixing of concrete will only be done on mortarboards (dugga-boards).</li> <li>Ready-mix trucks are not permitted to clean chutes on site. Cleaning into foundations or a dedicated cleaning pit is permitted.</li> <li>Both used and unused cement bags are to be stored in weatherproof containers so as not to be affected by rain or runoff.</li> <li>Contaminated soil resulting from concrete or cement spills, including residue produced by the washing of cavities, is to be removed immediately after the spillage has occurred and placed on the appropriate rubble stockpile.</li> <li>Runoff from the washing out of wall cavities is to be contained by excavations or berms around the foundations.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 25: Environmental risk assessment: Generation of wash water

Activity: The cleaning of vehicles, equipment and construction areas.	
Aspect: Contaminated wash water runoff.	
Nature of Environmental Impact: Soil-, surface water- and/or ground water- contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of the soil and ground water as a result of polluted wash water.	
<b>Proposed Mitigation</b>	

<ul style="list-style-type: none"> <li>• Washing or cleaning of equipment is to take place within designated areas.</li> <li>• A dedicated cleaning area is to be installed to facilitate washing of all cement and painting equipment. The cleaning area could be a plastic lined cleaning pit or dedicated plastic or metal drums, located as close as possible to a water point or within reach of a hose no longer than 10m.</li> <li>• No wastewater may be disposed of on site, onto the soil or into any water body.</li> <li>• Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 26: Environmental risk assessment: Storm water management

Activity: Construction activities.	
Aspect: Flow of storm water runoff through the construction site.	
Nature of Environmental Impact: Storm water contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of storm water flowing through the construction site.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Storm water must be diverted around areas of potential pollution, such as fuel storage areas.</li> <li>• Storm water measures must be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion.</li> <li>• The storm water drainage system must be maintained (free-draining) and not contaminated by other waste sources.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 27: Environmental risk assessment: Hazardous waste

Activity: Generation, storage and disposal of hazardous waste.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground water.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	

To prevent soil- and/or ground water- contamination due to hazardous substances.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Equipment and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site.</li> <li>Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants.</li> <li>Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. Oil and diesel spills are considered hazardous. Disposal of such contaminants should be done by following the recommended steps.</li> <li>Appropriate equipment to deal with fire or pollution incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for plant or machinery leaks, drums or containers for contaminated water and drip trays for minor hydrocarbon spills.</li> <li>Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 28: Environmental risk assessment: General waste and building rubble

Activity: Production, storage and disposal of general waste and building rubble.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground- water.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent soil- and/or ground water- contamination due to general waste produced.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>A construction refuse collection structure shall be erected on commencement of construction work within the boundaries of the site. The minimum requirement is as follows: <ul style="list-style-type: none"> <li>4 ready-fence panels (3m x 1.8m) covered with shade cloth or hessian, one panel being movable to provide access. The structure shall have a roof (ready fence panel, or similar) to contain waste materials in windy conditions. The floor shall be lined with HDPE plastic to prevent ground contamination from leachate such as cement powder residue or empty chemical or paint containers.</li> <li>Alternatively, refuse skips can be used but must have closing lids to ensure the containment of waste.</li> </ul> </li> <li>Refuse bins shall be provided for domestic waste (such as lunch litter) and placed in designated eating areas and any other areas where deemed necessary to control littering.</li> <li>Refuse bins are not to overflow and are to be emptied regularly. No littering is permitted on site.</li> <li>Building rubble is to be kept separate from other construction waste. Rubble is to be kept clean of brick ties, plastics, papers and cement bags at all times.</li> <li>Rubble stockpiles and refuse structures shall be positioned to permit easy access by removal trucks.</li> <li>Accumulation of large stockpiles of rubble and waste is not permitted. Waste is to be removed at regular intervals.</li> </ul>	

<ul style="list-style-type: none"> <li>All waste is to be disposed of at approved landfill sites, no burning or burying is permitted.</li> <li>The contractor shall delegate a specific waste management job description to an individual or team if directed by the ECO.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 29: Environmental risk assessment: Air quality

Activity: Construction activities (e.g. excavations), vehicles travelling on site, relocation of fuel storage tanks, the use of generators and the re-fuelling of construction vehicles.	
Aspect: Release of emissions and generation of dust.	
Nature of Environmental Impact: Air pollution.	
Nature of Socio-economic Impact: Nuisance.	
<b>Before Mitigation</b>	
Extent of the Impact	3
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To limit the generation of emissions, dust and nuisance.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Generators must be switched off when not in use.</li> <li>Traffic speed signs need to be erected to reduce speeding onsite.</li> <li>Dust suppression must be practiced on an ongoing basis.</li> <li>Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.</li> <li>After re-fuelling construction vehicles, the fuel caps must be replaced as soon as possible.</li> <li>A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	3
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 30: Environmental risk assessment: Traffic

Activity: Increased traffic frequency on road infrastructure.	
Aspect: Wear of access roads and insufficient vehicle inspections.	
Nature of Environmental and/or Socio-economic Impact: Accidents on access roads, unpermitted transport of materials and loss of materials being transported on the access roads to the mine.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1



<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To minimise the impact of an increase in traffic on access roads to the mine.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Ensure that all construction vehicles using access roads are roadworthy.</li> <li>• All loads are to be securely fastened when being transported.</li> <li>• All vehicles are to adhere to the tonnage limitation and acquire a permit as required.</li> <li>• All speed limits and other traffic regulations on the public roadways must be adhered to.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 31: Environmental risk assessment: Utilisation of water

Activity: Utilisation of water.	
Aspect: Inefficient and/or redundant use of a valuable resource.	
Nature of Environmental Impact: Wastage of water and depletion of water resource.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the wastage of a natural resource.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Leaking water taps and hosepipes must be repaired immediately.</li> <li>• Running water taps and hosepipes must not be left unattended.</li> <li>• Unused water standpipes are to be buried to prevent damage and resultant water leaks.</li> <li>• Taps are to be attached to secured supports and used in preference to standpipes with no valve mechanism to open and close water supply. All hose and tap connections are to be fitted with correct and appropriate plumbing fittings.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 32: Environmental risk assessment: Ablution facilities

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil-, surface water- and ground- water contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2



Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of the soil, surface water and groundwater.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers.</li> <li>Plumbed facilities are preferred. Chemical facilities are to be serviced regularly.</li> <li>Toilets should have properly closing doors and supplied with toilet paper.</li> <li>The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point.</li> <li>Chemical toilets are to be serviced weekly. The contractor is to ensure that no spillage occurs and that the contents are removed from site according to approved methods.</li> <li>Chemical toilets are to be emptied prior to temporary site closure for a period longer than 7 days.</li> <li>Only the use of ablution facilities will be permitted onsite.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 33: Environmental risk assessment: Hazardous chemicals

Activity: Removal and/or relocation of existing fuel, lubricant and anti-freeze tanks. Installation of new fuel and oil storage tanks. Storage and handling of hazardous chemicals, including fuel.	
Aspect: Hydrocarbon, lubricant and anti-freeze spills.	
Nature of Environmental Impact: Soil-, surface water- and groundwater- pollution.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent or minimise soil- and water- contamination.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Proper handling, storage and disposal of hazardous chemicals. All fuels and flammable materials are to be handled safely, stored safely and clearly labelled.</li> <li>Drip trays must be used to collect spillage from equipment, vehicles and plant. These should be emptied regularly into secondary containers.</li> <li>Vehicles should regularly be inspected for leaks and should be immediately repaired.</li> <li>Fuels and flammable materials are to be handled in a safety conscious manner.</li> <li>If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel.</li> <li>All fuels and flammable materials are to be stored safely and clearly labelled.</li> <li>Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed on fuel stores and tanks.</li> <li>All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids and drip trays.</li> <li>Fuel and flammable materials are to be kept under lock and key at all times and are to be stored at a central, easily accessible location.</li> </ul>	



- All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).

#### Removal/relocation of the temporary diesel depot

- Care must be taken when emptying diesel, lubrication and anti-freeze tanks so that no spillages occur. Drip trays must be used where practical.
- When moving tanks, care must be taken to prevent damage to the tanks that could result in spillages.
- Empty tanks must be stored on impermeable surfaces, such as concrete foundations, and may not be stored on bare soil.

#### Installation of the new diesel depot

- The diesel and oil storage tanks must be placed on impermeable foundations (e.g. concrete) that are designed to ensure that the tanks settle evenly and that corrosion is minimized where the tanks come into contact with the foundations.
- The tanks must be securely supported on a structure with a 4h fire rating and must have corrosion protection.
- Tanks must be adequately vented. Vent properties must be in accordance with SANS 10089-1:2008. All tanks must have approved emergency venting that will relieve excessive internal pressure in the event of fire exposure. The venting capacity shall be in accordance with an approved standard, such as API Std 2000.
- All tanks must be labelled to show their composition and tank capacity. Bund walls must be labelled to show their capacity.
- The tanks must be contained within an impermeable bund area capable of containing a volume not less than the greatest amount of product that can be released from the largest tank. The capacity of the bunded area must be calculated after the volume of the other tanks below the bund wall (excluding the largest tank), has been deducted.
- Bund walls must be designed by a person qualified in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000).
- Bund wall heights should not exceed 1.8m.
- Water drains within the bunded area must lead to an interceptor separator and sand trap.
- The field service bay, workshop and re-fuelling area must have impermeable floors, that are resistant to damage from petrol, oil and fire, and dirty water collection facilities. These must be connected to an interceptor separator and sand trap. The floors must be graded, cubed or diked to contain spills.
- When constructing impermeable surfaces at the field service bay, workshop and re-fuelling area, the weight of the vehicles that will travel over the surfaces must be taken into consideration.
- Diesel and oil transfer areas (loading and unloading) must be covered with concrete or a similar impermeable surface.
- All pipes, pipe fittings and valves must have been fabricated to an approved code and have a safety factor that is adequate for the fuel depot. Only steel valves may be used within the bunded area.
- Pipelines must be supported by bridges, gantries or similar structures. Pipelines should be protected against corrosion, where necessary. Pipelines should be colour coded based on their contents.
- Outer coverings for hoses must be resistant to contact with petroleum products and abrasion.

#### After Mitigation

Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>



Table 34: Environmental risk assessment: Noise

Activity: Construction activities.	
Aspect: Generation of noise.	
Nature of Environmental Impact: Disturbance or nuisance to adjacent land users/owners.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
Minimise noise generation from construction activities	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• The site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).</li> <li>• Regular maintenance of vehicles and equipment.</li> <li>• All plant and machinery are to be fitted with adequate silencers.</li> <li>• Working hours should be restricted to daylight hours.</li> <li>• Working procedures should be structured so as to avoid the unnecessary generation of noise.</li> <li>• No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>• If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the site manager.</li> <li>• No noisy work is to be conducted over the weekends or on religious public holidays.</li> <li>• A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 35: Environmental risk assessment: Resource usage during construction

Activity: The use of resources such as electricity, oil, grease, fuel and construction materials.	
Aspect: Inefficient or redundant usage of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Regular maintenance and inspection of equipment to prevent leaks.</li> <li>• Optimisation of processes to reduce electricity consumption.</li> <li>• Regular site inspection by supervisors.</li> <li>• Proper environmental training and awareness.</li> </ul>	



<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

## Operational Phase

Table 36: Environmental risk assessment: Operation of the fuel depot

Activity: Operation of the fuel depot and wash bay.	
Aspect: Spillages and leakages of fuel, oil and/or motor oil.	
Nature of Environmental Impact: Soil-, surface water- and/or groundwater contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent spillages and leakages that can result in soil-, surface water- and ground water contamination.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Fuel and oil storage tanks must undergo yearly integrity assessments.</li> <li>• Current water (surface and groundwater) monitoring programmes must include monitoring to verify whether any groundwater pollution is taking place as a result of the fuel depot. The parameters to monitor must be determined by a geohydrologist.</li> <li>• Hoses must be subjected to pressure-tests on a yearly basis and records of this must be kept on file. The pressure-tests should be conducted at 1.5 times the maximum working pressures.</li> <li>• Spill kits must be available at the depot and must be used as soon as a spill is noticed.</li> <li>• Effluent, detergents and contaminated water from the wash bay must be contained and channeled to the interceptor separator.</li> <li>• Limited access to chemical storage areas.</li> <li>• Chemicals are to be properly labeled and handled in a safety conscious manner.</li> </ul>	
<b>Loading and unloading of fuel and oil from the storage tanks</b>	
<ul style="list-style-type: none"> <li>• Vehicles may not be left unattended.</li> <li>• Vehicles must be left in gear and prevented from unintentionally moving forwards or backwards.</li> <li>• Vehicle engines must be switched off prior to loading or unloading. Vehicles may only be restarted after all caps, valves, cocks and covers have been closed and secured.</li> <li>• No internal combustion engines, besides those designed for transporting, handling and pumping flammable materials) may be closer than 15m during loading and unloading of class I or II products.</li> <li>• Splash loading or filling is not allowed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>



Table 37: Environmental risk assessment: Air quality

Activity: Operation of the fuel depot	
Aspect: Generation of dust and release of emissions from vehicles and storage tanks.	
Nature of Environmental Impact: Increased air pollution and nuisance.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To minimise the nuisance due to dust and to limit the release of emissions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Traffic speed signs need to be erected to control speeding onsite.</li> <li>Dust suppression must be practiced on site on a continual basis.</li> <li>Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.</li> <li>Empty containers must be closed to limit the release of emissions.</li> <li>Storage tanks must be closed as soon as possible after loading. When vehicles have been re-fuelled, fuel caps must be replaced as soon as possible.</li> <li>A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 38: Environmental risk assessment: Fire establishment

Activity: Operation of the fuel depot.	
Aspect: Operational activities that create a fire risk.	
Nature of Environmental Impact: Fire and/or explosions.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>18</b>
<b>Objective of Mitigation Measures</b>	
To prevent the occurrence of fires and/or explosions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Fire-fighting equipment must be serviced as stipulated in SANS 1475-1.</li> <li>Fire fighting hoses must be inspected annually and records kept on file. Defective hoses must immediately be replaced.</li> <li>The tone and volume of the fire alarm must be such that it is clearly distinguishable from background noise and audible, under prevailing wind conditions, at the site perimeter.</li> <li>A site layout plan must be drawn up and displayed at the depot. The plan must indicate the following, amongst others: location of storage tanks and their contents, pipelines and valves, fire-fighting equipment and access routes.</li> </ul>	

<ul style="list-style-type: none"> <li>Detailed information regarding the depot (layout plans, list of fire-fighting equipment present, etc.) must be conveyed to the local fire authorities. A joint action plan in case of a fire or other emergency must be agreed upon.</li> <li>Emergency plans must be prepared for the fuel depot. The plans must be in accordance with the regulations for major hazard installations as stipulated in the OHS Act, 1993.</li> <li>Emergency numbers must be clearly displayed at the depot, near a telephone.</li> <li>Fire fighting systems and equipment must be inspected annually by a competent person and records thereof kept on file.</li> <li>A fire practice, in conjunction with the local fire authority, must be undertaken annually.</li> <li>Good housekeeping must be maintained. This includes the storage of flammable materials, such as oil-soaked soil or rags, in designated, closed containers away from the diesel and oil storage tanks.</li> <li>No combustible materials may be stored within the bunded areas.</li> <li>Access roads or corridors to fire-fighting equipment may not be obstructed.</li> <li>Before re-filling of diesel and oil tanks, a continuous path (bond) must be in place.</li> <li>Smoking is not permitted during loading or unloading of diesel and oil or in the vicinity of the storage tanks.</li> <li>Welding, cutting or other spark-producing activities are not permitted within the fuel depot without an authorized hot-work permit and may only be conducted more than 15m from the storage tanks.</li> <li>Workers must be specifically trained for work at the fuel depot. This training must include the correct fire fighting procedures and records of all training must be kept on file. Training must also be provided on the correct loading and offloading procedures.</li> <li>Fire drills must be conducted regularly and records kept on file.</li> <li>Designated areas must be used for cooking and smoking.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 39: Environmental risk assessment: Storm water management

Activity: Storm water management.	
Aspect: Incorrect storm water management.	
Nature of Environmental Impact: Contamination of storm water flowing through the depot.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of storm water flowing through the depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Storm water must be diverted away from areas where it could be contaminated.</li> <li>The storm water drainage system must be maintained (free-draining) and not contaminated by other waste sources.</li> <li>Storm water measures must be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1



Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 40: Environmental risk assessment: Noise and light pollution and visual impact

Activity: Operation of the fuel depot.	
Aspect: Generation of additional noise and light. Increased visibility of the mine due to the additional fuel depot infrastructure.	
Nature of Environmental Impact: Noise and light pollution. Visual impact on neighbours of the mine.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To minimise nuisance due to increased noise and light pollution at the fuel depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Adequate lighting must be provided at the fuel depot at night. Lights must as far as possible be angled inwards to the fuel depot and not to the exterior of the site (especially not to the north-west, west, and south-west).</li> <li>Ensure that machinery and equipment is in proper working condition, fitted with silencing equipment if necessary.</li> <li>Keep equipment in good repair and attend to loose or rattling covers, worn bearings and broken equipment.</li> <li>Vehicle drivers must be informed about proper driving practices. Unnecessary idling, hooting or revving of engines must be avoided.</li> <li>Equipment and vehicles should be selected and maintained to minimise noise levels.</li> <li>Personnel must be provided with the relevant PPE.</li> <li>A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 41: Environmental risk assessment: Waste generation

Activity: Generation, storage and removal of general and hazardous waste.	
Aspect: Incorrect waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground water.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	

To prevent soil-, surface- and/or ground water- contamination due to general and hazardous waste produced.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Waste drums, with closing lids, must be provided at the fuel depot. The drums must be colour coded or clearly labelled for the different waste types.</li> <li>Waste drums must be stored within a bunded area on an impermeable surface.</li> <li>Procedures must be drawn up for the correct handling, storage and disposal of waste.</li> <li>Employees must be trained to ensure that proper waste separation is carried out when placing waste in waste drums.</li> <li>Littering on site is not permitted.</li> <li>Waste must be removed to larger storage skips on a regular basis before the drums become full.</li> <li>General and hazardous waste must be removed and disposed of by a licensed contractor at regular intervals before storage skips overflow.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 42: Environmental risk assessment: Resource usage

Activity: Usage of resources such as electricity and water.	
Aspect: Inefficient or redundant use of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Resources such as water and electricity must be used efficiently.</li> <li>Proper environmental training and awareness. Methods to conserve resources should be conveyed to workers.</li> <li>Water must be re-used wherever possible.</li> <li>Regular maintenance and inspection of equipment, such as water pipes, to prevent leaks.</li> <li>High pressure hoses should be used, if possible, at the wash bay to conserve water.</li> <li>Lights and electrical appliances/equipment must be switched off when not in use.</li> <li>Leaking taps and hose pipes must immediately be repaired.</li> <li>Running water taps and hosepipes are not to be left unattended.</li> <li>Regular site inspection by supervisors and monitoring of resource consumption.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>



Table 43: Environmental risk assessment: Sanitation

Activity: Ablution facilities on site (toilets, septic tank and soak away).	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil and groundwater contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To ensure the effective operation of the septic tank system, thereby preventing contamination of the environment.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• The septic tank system should be maintained as indicated by the supply company.</li> <li>• The ground above the septic tank system must be regularly inspected for any rise of sewage water to the surface. This could indicate a blocked or broken pipe leading to the soak away.</li> <li>• Ablution facilities should be maintained to prevent or minimize blockage and leakages.</li> <li>• Should toilets become blocked or run slowly, this should be reported and the cause investigated. This could be due to a blocked or broken pipe leading from the toilets to the septic tank system.</li> <li>• Create employee awareness about proper use of ablution facilities and the importance of proper hygiene. No cigarette butts, fats, oils, paper towels etc. may be disposed of into toilets or wash basins.</li> <li>• Toilets should have properly closing doors and supplied with toilet paper.</li> <li>• Movement of heavy vehicles above the septic tank system must be avoided as this may crack pipes.</li> <li>• Pump out the septic tank as indicated by the supply company.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 44: Environmental risk assessment: Resource use during operation

Activity: Operation of the fuel depot.	
Aspect: Inefficient or redundant use of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Regular maintenance and inspection of equipment, such as water pipes, to prevent leaks.</li> <li>• Regular site inspection by supervisors.</li> <li>• Proper environmental training and awareness.</li> </ul>	



<ul style="list-style-type: none"> <li>Monitoring of resource consumption.</li> <li>Implementation of technologies that can reduce resource consumption.</li> <li>Processes should be designed to save electricity and water where possible.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 45: Environmental risk assessment: Employee safety

Activity: Employees working at the fuel depot.	
Aspect: Employees not working with the correct equipment and/or not competent for the work.	
Nature of Environmental Impact: Worker injuries and/or fatalities.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>14</b>
<b>Objective of Mitigation Measures</b>	
To ensure that employees conduct their work in a safe manner.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Personnel must be provided with the required PPE when working at the fuel depot.</li> <li>Personnel must receive appropriate training before commencing work at the site.</li> <li>Casual workers must also receive training before commencing work.</li> <li>Proof of all training must be kept on file.</li> <li>Personnel must be competent to undertake their work and must conduct all work in a responsible manner. All mine (SHE) procedures must be followed.</li> <li>A well stocked first aid box must be available at all times.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 46: Environmental risk assessment: Maintenance

Activity: Maintenance and repairs at the fuel depot.	
Aspect: Incorrect maintenance practices.	
Nature of Environmental Impact: Fires or injuries to employees.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	



To enable save and effective maintenance at the fuel depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Repairs or alternations may not be undertaken whilst any equipment is in use, such as when a tank is being loaded or unloaded.</li> <li>Notices should be issued to relevant parties at the mine when maintenance is being scheduled.</li> <li>Hot work or similar hazardous work may not be undertaken inside of storage tanks before they have been inspected, a gas-free certificate has been issued, all pipelines have been disconnected and the relevant authorities have been notified. Confined-space entry permits must also first be obtained.</li> <li>In cases where a gas-free certificate has not been issued, workers may only enter the storage tanks when wearing a breathing apparatus. An observer must be present outside of the tank at all times and must immediately assist or summon assistance should the person inside of the tank collapse.</li> <li>Electrical equipment must be isolated and locked out before any repairs commence. This must be verified by an accredited person. Warning notices must be affixed or hung onto circuit breakers and/or switches to prevent accidental switching-on during repairs. An accredited person must certify that the apparatus is electrically and mechanically sound before it is brought back into use.</li> <li>Records of repairs must be kept on file.</li> <li>Maintenance and repairs must be supervised by a responsible staff member or members.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

### 12.4.1 Environmental Impact Assessments – Alternative Site

#### Design and Pre-Construction Phase

Table 47: Environmental risk assessment: Design and planning

Activity: Design and planning of the proposed fuel depot.	
Aspect: Inadequate planning and design.	
Nature of Environmental Impact: Impacts on the environment that could potentially have been avoided.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>14</b>
<b>Objective of Mitigation Measures</b>	
To effectively plan and design the fuel depot taking the environment on site into consideration	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Site selection for the proposed fuel depot must include consideration of the following: <ul style="list-style-type: none"> <li>The slope of the ground in relation to risk areas, such as residential areas.</li> <li>Access to and from the proposed site.</li> <li>The location of nearby drainage systems.</li> <li>Available water supplies.</li> <li>Fire protection services and their reaction times. Security and general service facilities in the area.</li> <li>Population densities of the surrounding areas.</li> </ul> </li> </ul>	



<ul style="list-style-type: none"> <li>▪ Future expansions (if applicable).</li> <li>▪ General housekeeping practices at the mine.</li> <li>▪ The depth of the water table (if this is above the first impermeable layer) and the measurement date.</li> <li>▪ Soil types down to the first impermeable layer and the reduced level of the impermeable layer over the site.</li> <li>▪ The location of boreholes, artisan wells and aquifers within 500m of the site. An analysis must be done for hydrogen sulphide and hydrocarbons in the water.</li> <li>▪ The above listed information must be recorded before the construction at the site commences and should be used for future monitoring purposes.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

## Construction Phase

Table 48: Environmental risk assessment: Site clearance and construction activities

Activity: Site clearance, removal and relocation of existing temporary fuel depot facilities (e.g. fuel tanks), and construction activities.	
Aspect: Lack of environmental knowledge amongst workers and contractors.	
Nature of Environmental Impact: Harm to the environment due to workers or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent harm to the environment through the actions of uneducated workers or contractors	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Before any construction takes place the proposed area for the fuel depot will be pegged out. All construction activities will be limited to these areas in order to reduce the footprint of the proposed activity.</li> <li>• Construction areas should be fenced off or barricaded prior to and during construction.</li> <li>• Site clearing is to be limited to only the area necessary for carrying out the specified works.</li> <li>• The contractor is to draw up a plan for submission to the ECO and the site manager indicating the locations of construction infrastructure including the site-camp, equipment cleaning pits, toilets, stores, site office, and “no-go” areas.</li> <li>• The “no-go” areas are to be demarcated with a wire and danger-tape temporary barrier fence attached to planted posts (wooden or metal) at a minimum. This can be in the form of two strands of wire 500mm apart on droppers of 3m spacing, with danger tape zigzagged between the wires.</li> <li>• The contractor is to ensure that all employees, including sub-contractors and their employees, attend on-site Environmental Awareness Training prior to commencing work on site.</li> <li>• Employees, including sub-contractors, must be trained to operate specific equipment.</li> <li>• Follow-up Environmental Awareness Training may be required from time to time as new subcontractors or crews commence work or for specific activities that may potentially impact the environment, or if work is being undertaken in sensitive environments.</li> <li>• The contractor is to maintain accurate records of any training undertaken.</li> <li>• Training is to cover all aspects of the EMP, procedures to be followed, the sensitivity of the site</li> </ul>	

and importance of adhering to “no-go” areas.	
<ul style="list-style-type: none"> <li>• The ECO shall monitor the contractor’s compliance with the requirement to provide sufficient environmental awareness training to all site staff.</li> <li>• Environmental signage is to be displayed on the site including – “no smoking”, “fire hazards”, etc.</li> <li>• Emergency numbers are to be clearly displayed.</li> <li>• Construction workers must adhere to Health, Safety and Environmental procedures at the mine.</li> <li>• All construction workers shall be issued with ID badges and clearly identifiable uniforms.</li> <li>• All construction workers shall be transported to and from site on a daily basis.</li> <li>• Workers shall remain on the site at all times during the work day and no one will be allowed to leave site by foot, not even during break times.</li> <li>• Night watchmen are to be provided with adequate cooking and heating facilities (no open fires), a suitable method of disposing of wastewater, and access to communication equipment.</li> <li>• Access to fuel and other equipment stores is to be strictly controlled.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 49: Environmental risk assessment: Stockpiling

Activity: Stockpiling of topsoil, subsoil and cleared vegetation.	
Aspect: Incorrect stockpiling practices.	
Nature of Environmental Impact: Loss of valuable topsoil, erosion of stockpiles and cleared areas.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>18</b>
<b>Objective of Mitigation Measures</b>	
To ensure proper stockpiling and prevent the erosion of cleared areas.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Vegetation must be removed and stockpiled. No burning of vegetation is permitted. Cleared vegetation must either be re-planted elsewhere, used at a composting facility or removed to a landfill site.</li> <li>• Topsoil must be removed and stockpiled in a designated area for future rehabilitation purposes. Topsoil must be stockpiled separately from subsoil.</li> <li>• Subsoil must be stockpiled in a designated area or areas.</li> <li>• The contractor is to ensure that all reasonable measures are taken to limit erosion and sedimentation from construction activities. Erosion protection measures include cut-off drains and/or berms.</li> <li>• Removed subsoil and rocks must be used to rehabilitate the areas around the fuel depot once construction has been completed. This includes infilling and leveling of the ground.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>



Table 50: Environmental risk assessment: Fire establishment

Activity: Construction of the depot.	
Aspect: Construction practices that create a fire risk.	
Nature of Environmental Impact: Fire and/or explosion of flammable substances.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent the occurrence of fires and/or explosions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Fire-fighting equipment must be available at the construction site.</li> <li>• Flammable materials are to comply with standard fire safety regulations.</li> <li>• Equipment is to be maintained in good working order to the satisfaction of local fire authorities.</li> <li>• Smoking is prohibited at the construction site. Notices are to be prominently displayed prohibiting smoking this area.</li> <li>• Welding, flame cutting and other hot work may not occur in close proximity to any fuel or oil tanks and may only be undertaken in places where the necessary safety precautions are in place (i.e. with a fire extinguisher immediately accessible).</li> <li>• Fuels and flammable materials are to be handled in a safety conscious manner.</li> <li>• All fuels and flammable materials are to be stored safely and clearly labeled.</li> <li>• Safety signage including “No Smoking”, “No Open Flames”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed on fuel stores and tanks.</li> <li>• All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids and drip trays.</li> <li>• Storage areas for fuels and flammable materials are to comply with standard fire safety regulations.</li> <li>• All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).</li> </ul>	
<b>Removal/relocation of the temporary diesel depot</b>	
<ul style="list-style-type: none"> <li>• Should gas-freeing be undertaken once the storage tanks have been emptied, all possible sources of ignition must be removed from the area and persons must keep clear of the bund- and downwind- areas. Gas-freeing operations must be supervised by a designated person.</li> <li>• The following gas-freeing method is proposed for above-ground horizontal tanks: <ul style="list-style-type: none"> <li>▪ The tanks must be drained as far as possible.</li> <li>▪ All pipelines must be disconnected and blanketed off. All apertures must be fully opened.</li> <li>▪ The manhole covers must be removed and water must be used as a flushing medium.</li> <li>▪ Ventilation can be assisted through mechanical means or a wind-sail.</li> </ul> </li> </ul>	
<b>Installation of the fuel depot</b>	
<ul style="list-style-type: none"> <li>• Fire-fighting equipment must be installed and painted red (A11 signal red or A14 poppy red). Water requirements must be calculated based on a full risk assessment conducted by an engineer.</li> <li>• Fire-fighting equipment should include fire extinguishers at regular intervals in the field service bay and re-fuelling area. At the diesel and oil storage tanks, a fire fighting system must be installed. This could include water lines and a sprinkler system above the storage tanks. Fire-fighting equipment must be accessible from different directions and must be clearly marked using reflective materials to enable visibility at night.</li> <li>• The storage tanks must be installed with minimum safety distances and levels of protection as stipulated in SANS 10089-1:2008 and must be arranged so that firefighting can be carried out effectively with mobile and stationary fire-fighting equipment.</li> <li>• Access roads or corridors to fire-fighting equipment must be unobstructed.</li> </ul>	



<ul style="list-style-type: none"> <li>The minimum distance between a tank and the toe of the inside bund wall should be at least 1.5m.</li> <li>All tanks must have a form of approved emergency venting that will relieve excessive internal pressure in the event of fire exposure. The venting capacity shall be in accordance with an approved standard, such as API Std 2000.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 51: Environmental risk assessment: Cement and concrete

Activity: The storage, mixing and disposal of cement and concrete.	
Aspect: Concrete and cement spillages.	
Nature of Environmental Impact: Water- and/or soil- pollution.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of soil and water as a result of concrete and cement used on site.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>No mixing of concrete or cement directly on the ground is permitted. The mixing of concrete will only be done on mortarboards (dugga-boards).</li> <li>Ready-mix trucks are not permitted to clean chutes on site. Cleaning into foundations or a dedicated cleaning pit is permitted.</li> <li>Both used and unused cement bags are to be stored in weatherproof containers so as not to be affected by rain or runoff.</li> <li>Contaminated soil resulting from concrete or cement spills, including residue produced by the washing of cavities, is to be removed immediately after the spillage has occurred and placed on the appropriate rubble stockpile.</li> <li>Runoff from the washing out of wall cavities is to be contained by excavations or berms around the foundations.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 52: Environmental risk assessment: Generation of wash water

Activity: The cleaning of vehicles, equipment and construction areas.	
Aspect: Contaminated wash water runoff.	
Nature of Environmental Impact: Soil-, surface water- and/or ground water- contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2

<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of the soil and ground water as a result of polluted wash water.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Washing or cleaning of equipment is to take place within designated areas.</li> <li>A dedicated cleaning area is to be installed to facilitate washing of all cement and painting equipment. The cleaning area could be a plastic lined cleaning pit or dedicated plastic or metal drums, located as close as possible to a water point or within reach of a hose no longer than 10m.</li> <li>No wastewater may be disposed of on site, onto the soil or into any water body.</li> <li>Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 53: Environmental risk assessment: Storm water management

Activity: Construction activities.	
Aspect: Flow of storm water runoff through the construction site.	
Nature of Environmental Impact: Storm water contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of storm water flowing through the construction site.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Storm water must be diverted around areas of potential pollution, such as fuel storage areas.</li> <li>Storm water measures must be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion.</li> <li>The storm water drainage system must be maintained (free-draining) and not contaminated by other waste sources.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 54: Environmental risk assessment: Hazardous waste

Activity: Generation, storage and disposal of hazardous waste.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground water.	
<b>Before Mitigation</b>	
Extent of the Impact	2

Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent soil- and/or ground water- contamination due to hazardous substances.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Equipment and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site.</li> <li>• Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants.</li> <li>• Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. Oil and diesel spills are considered hazardous. Disposal of such contaminants should be done by following the recommended steps.</li> <li>• Appropriate equipment to deal with fire or pollution incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for plant or machinery leaks, drums or containers for contaminated water and drip trays for minor hydrocarbon spills.</li> <li>• Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 55: Environmental risk assessment: General waste and building rubble

Activity: Production, storage and disposal of general waste and building rubble.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground- water.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent soil- and/or ground water- contamination due to general waste produced.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• A construction refuse collection structure shall be erected on commencement of construction work within the boundaries of the site. The minimum requirement is as follows: <ul style="list-style-type: none"> <li>▪ 4 ready-fence panels (3m x 1.8m) covered with shade cloth or hessian, one panel being movable to provide access. The structure shall have a roof (ready fence panel, or similar) to contain waste materials in windy conditions. The floor shall be lined with HDPE plastic to prevent ground contamination from leachate such as cement powder residue or empty chemical or paint containers.</li> <li>▪ Alternatively, refuse skips can be used but need to have closing lids to ensure the containment of waste.</li> </ul> </li> <li>• Refuse bins shall be provided for domestic waste (such as lunch litter) and placed in designated eating areas and any other areas where deemed necessary to control littering.</li> <li>• Refuse bins are not to overflow and are to be emptied regularly. No littering is permitted on site.</li> </ul>	

<ul style="list-style-type: none"> <li>• Building rubble is to be kept separate from other construction waste. Rubble is to be kept clean of brick ties, plastics, papers and cement bags at all times.</li> <li>• Rubble stockpiles and refuse structures shall be positioned to permit easy access by removal trucks.</li> <li>• Accumulation of large stockpiles of rubble and waste is not permitted. Waste is to be removed at regular intervals.</li> <li>• All waste is to be disposed of at approved landfill sites, no burning or burying is permitted.</li> <li>• The contractor shall delegate a specific waste management job description to an individual or team if directed by the ECO.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 56: Environmental risk assessment: Air quality

Activity: Construction activities (e.g. excavations), vehicles travelling on site, relocation of fuel storage tanks, the use of generators and the re-fuelling of construction vehicles.	
Aspect: Release of emissions and generation of dust.	
Nature of Environmental Impact: Air pollution.	
Nature of Socio-economic Impact: Nuisance.	
<b>Before Mitigation</b>	
Extent of the Impact	3
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To limit the generation of emissions, dust and nuisance.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Generators must be switched off when not in use.</li> <li>• Traffic speed signs need to be erected to reduce speeding onsite.</li> <li>• Dust suppression must be practiced on an ongoing basis.</li> <li>• Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.</li> <li>• After re-fuelling construction vehicles, the fuel caps must be replaced as soon as possible.</li> <li>• A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	3
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 57: Environmental risk assessment: Traffic

Activity: Increased traffic frequency on road infrastructure.	
Aspect: Wear of access roads and insufficient vehicle inspections.	
Nature of Environmental and/or Socio-economic Impact: Accidents on access roads, unpermitted	

transport of materials and loss of materials being transported on the access roads to the mine.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To minimise the impact of an increase in traffic on access roads to the mine.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Ensure that all construction vehicles using access roads are roadworthy.</li> <li>• All loads are to be securely fastened when being transported.</li> <li>• All vehicles are to adhere to the tonnage limitation and acquire a permit as required.</li> <li>• All speed limits and other traffic regulations on the public roadways must be adhered to.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 58: Environmental risk assessment: Utilisation of water

Activity: Utilisation of water.	
Aspect: Inefficient and/or redundant use of a valuable resource.	
Nature of Environmental Impact: Wastage of water and depletion of water resource.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the wastage of a natural resource.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Leaking water taps and hosepipes must be repaired immediately.</li> <li>• Running water taps and hosepipes must not be left unattended.</li> <li>• Unused water standpipes are to be buried to prevent damage and resultant water leaks.</li> <li>• Taps are to be attached to secured supports and used in preference to standpipes with no valve mechanism to open and close water supply. All hose and tap connections are to be fitted with correct and appropriate plumbing fittings.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>





Table 59: Environmental risk assessment: Ablution facilities

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil-, surface water- and ground- water contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of the soil, surface water and groundwater.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers.</li> <li>Plumbed facilities are preferred. Chemical facilities are to be serviced regularly.</li> <li>Toilets should have properly closing doors and supplied with toilet paper.</li> <li>The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point.</li> <li>Chemical toilets are to be serviced weekly. The contractor is to ensure that no spillage occurs and that the contents are removed from site according to approved methods.</li> <li>Chemical toilets are to be emptied prior to temporary site closure for a period longer than 7 days.</li> <li>Only the use of ablution facilities will be permitted onsite.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 60: Environmental risk assessment: Hazardous chemicals

Activity: Removal and/or relocation of existing fuel, lubricant and anti-freeze tanks. Installation of new fuel and oil storage tanks. Storage and handling of hazardous chemicals, including fuel.	
Aspect: Hydrocarbon, lubricant and anti-freeze spills.	
Nature of Environmental Impact: Soil-, surface water- and groundwater- pollution.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent or minimise soil- and water- contamination.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Proper handling, storage and disposal of hazardous chemicals. All fuels and flammable materials are to be handled safely, stored safely and clearly labelled.</li> <li>Drip trays must be used to collect spillage from equipment, vehicles and plant. These should be emptied regularly into secondary containers.</li> <li>Vehicles should regularly be inspected for leaks and should be immediately repaired.</li> <li>Fuels and flammable materials are to be handled in a safety conscious manner.</li> <li>If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel.</li> </ul>	

- All fuels and flammable materials are to be stored safely and clearly labeled.
- Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed on fuel stores and tanks.
- All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids and drip trays.
- Fuel and flammable materials are to be kept under lock and key at all times and are to be stored at a central, easily accessible location.
- All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).

#### **Removal/relocation of the temporary diesel depot**

- Care must be taken when emptying diesel, lubrication and anti-freeze tanks so that no spillages occur. Drip trays must be used where practical.
- When moving tanks, care must be taken to prevent damage to the tanks that could result in spillages.
- Empty tanks must be stored on impermeable surfaces, such as concrete foundations, and may not be stored on bare soil.

#### **Installation of the new diesel depot**

- The diesel and oil storage tanks must be placed on impermeable foundations (e.g. concrete) that are designed to ensure that the tanks settle evenly and that corrosion is minimized where the tanks come into contact with the foundations.
- The tanks must be securely supported on a structure with a 4h fire rating and must have corrosion protection.
- Tanks must be adequately vented. Vent properties must be in accordance with SANS 10089-1:2008. All tanks must have approved emergency venting that will relieve excessive internal pressure in the event of fire exposure. The venting capacity shall be in accordance with an approved standard, such as API Std 2000.
- All tanks must be labelled to show their composition and tank capacity. Bund walls must be labelled to show their capacity.
- The tanks must be contained within an impermeable bund area capable of containing a volume not less than the greatest amount of product that can be released from the largest tank. The capacity of the bunded area must be calculated after the volume of the other tanks below the bund wall (excluding the largest tank), has been deducted.
- Bund walls must be designed by a person qualified in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000).
- Bund wall heights should not exceed 1.8m.
- Water drains within the bunded area must lead to an interceptor separator and sand trap.
- The field service bay, workshop and re-fuelling area must have impermeable floors that are resistant to damage from petrol, oil and fire; and dirty water collection facilities. These must be connected to an interceptor separator and sand trap. The floors must be graded, cubed or diked to contain spills.
- When constructing impermeable surfaces at the field service bay, workshop and re-fuelling area, the weight of the vehicles that will travel over the surfaces must be taken into consideration.
- Diesel and oil transfer areas (loading and unloading) must be covered with concrete or a similar impermeable surface.
- All pipes, pipe fittings and valves must have been fabricated to an approved code and have a safety factor that is adequate for the fuel depot. Only steel valves may be used within the bunded area.
- Pipelines must be supported by bridges, gantries or similar structures. Pipelines should be protected against corrosion, where necessary. Pipelines should be colour coded based on their contents.
- Outer coverings for hoses must be resistant to contact with petroleum products and abrasion.

#### **After Mitigation**

Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3

<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 61: Environmental risk assessment: Noise

Activity: Construction activities.	
Aspect: Generation of noise.	
Nature of Environmental Impact: Disturbance or nuisance to adjacent land users/owners.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
Minimise noise generation from construction activities.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>The site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).</li> <li>Regular maintenance of vehicles and equipment.</li> <li>All plant and machinery are to be fitted with adequate silencers.</li> <li>Working hours should be restricted to daylight hours.</li> <li>Working procedures should be structured so as to avoid the unnecessary generation of noise.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the site manager.</li> <li>No noisy work is to be conducted over the weekends or on religious public holidays.</li> <li>A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 62: Environmental risk assessment: Resource usage during construction

Activity: The use of resources such as electricity, oil, grease, fuel and construction materials.	
Aspect: Inefficient or redundant usage of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	



<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Regular maintenance and inspection of equipment to prevent leaks.</li> <li>Optimisation of processes to reduce electricity consumption.</li> <li>Regular site inspection by supervisors.</li> <li>Proper environmental training and awareness.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

## Operational Phase

Table 63: Environmental risk assessment: Operation of the fuel depot

Activity: Operation of the fuel depot and wash bay	
Aspect: Spillages and leakages of fuel, oil and/or motor oil	
Nature of Environmental Impact: Soil-, surface water- and/or groundwater contamination	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent spillages and leakages that can result in soil-, surface water- and ground water contamination.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Fuel and oil storage tanks must undergo yearly integrity assessments.</li> <li>Current water (surface and groundwater) monitoring programmes must include monitoring to verify whether any groundwater pollution is taking place as a result of the fuel depot. The parameters to monitor must be determined by a geohydrologist.</li> <li>Hoses must be subjected to pressure-tests on a yearly basis and records of this must be kept on file. The pressure-tests should be conducted at 1.5 times the maximum working pressures.</li> <li>Spill kits must be available at the depot and must be used as soon as a spill is noticed.</li> <li>Effluent, detergents and contaminated water from the wash bay must be contained and channeled to the interceptor separator.</li> <li>Limited access to chemical storage areas.</li> <li>Chemicals are to be properly labeled and handled in a safety conscious manner.</li> </ul>	
<b>Loading and unloading of fuel and oil from the tanks</b>	
<ul style="list-style-type: none"> <li>Vehicles may not be left unattended.</li> <li>Vehicles must be left in gear and prevented from unintentionally moving forwards or backwards.</li> <li>Vehicle engines must be switched off prior to loading or unloading. Vehicles may only be restarted after all caps, valves, cocks and covers have been closed and secured.</li> <li>No internal combustion engines, besides those designed for transporting, handling and pumping flammable materials) may be closer than 15m during loading and unloading of class I or II products.</li> <li>Splash loading or filling is not allowed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1

Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 64: Environmental risk assessment: Air quality

Activity: Operation of the fuel depot.	
Aspect: Generation of dust and release of emissions from vehicles and storage tanks.	
Nature of Environmental Impact: Nuisance due to dust and increased air pollution.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To minimise the nuisance due to dust and to limit the release of emissions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Traffic speed signs need to be erected to control speeding onsite.</li> <li>• Dust suppression must be practiced on site on a continual basis.</li> <li>• Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.</li> <li>• Empty containers must be closed to limit the release of emissions.</li> <li>• Storage tanks must be closed as soon as possible after loading. When vehicles have been re-fuelled, fuel caps must be replaced as soon as possible.</li> <li>• A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 65: Environmental risk assessment: Fire establishment

Activity: Operation of the fuel depot.	
Aspect: Operational activities that create a fire risk.	
Nature of Environmental Impact: Fire and/or explosions.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>18</b>
<b>Objective of Mitigation Measures</b>	
To prevent the occurrence of fires and/or explosions.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Fire-fighting equipment must be serviced as stipulated in SANS 1475-1.</li> <li>• Fire fighting hoses must be inspected annually and records kept on file. Defective hoses must</li> </ul>	



immediately be replaced.	
<ul style="list-style-type: none"> <li>• The tone and volume of the fire alarm must be such that it is clearly distinguishable from background noise and audible, under prevailing wind conditions, at the site perimeter.</li> <li>• A site layout plan must be drawn up and displayed at the depot. The plan must indicate the following, amongst others: location of tanks and their contents, pipelines and valves, fire-fighting equipment and access routes.</li> <li>• Detailed information regarding the depot (layout plans, list of fire-fighting equipment present, etc.) must be conveyed to the local fire authorities. A joint action plan in case of a fire or other emergency must be agreed upon.</li> <li>• Emergency plans must be prepared for the fuel depot. The plans must be in accordance with the regulations for major hazard installations as stipulated in the OHS Act, 1993.</li> <li>• Emergency numbers must be clearly displayed at the depot, near a telephone.</li> <li>• Fire fighting systems and equipment must be inspected annually by a competent person and records thereof kept on file.</li> <li>• A fire practice, in conjunction with the local fire authority, must be undertaken annually.</li> <li>• Good housekeeping must be maintained. This includes the storage of flammable materials, such as oil-soaked soil or rags, in designated, closed containers away from the diesel and oil storage tanks.</li> <li>• Vegetation around the fuel depot must be kept short and a fire break must be maintained.</li> <li>• No combustible materials may be stored within the bunded areas.</li> <li>• Access roads or corridors to fire-fighting equipment may not be obstructed.</li> <li>• Before re-filling of diesel and oil tanks, a continuous path (bond) must be in place.</li> <li>• Smoking is not permitted during loading or unloading of diesel and oil or in the vicinity of the storage tanks.</li> <li>• Welding, cutting or other spark-producing activities are not permitted within the fuel depot without an authorized hot-work permit and may only be conducted more than 15m from the storage tanks.</li> <li>• Workers must be specifically trained for work at the fuel depot. This training must include the correct fire fighting procedures and records of all training must be kept on file. Training must also be provided on the correct loading and offloading procedures.</li> <li>• Fire drills must be conducted regularly and records kept on file.</li> <li>• Designated areas must be used for cooking and smoking.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 66: Environmental risk assessment: Storm water management

Activity: Storm water management.	
Aspect: Incorrect storm water management.	
Nature of Environmental Impact: Contamination of storm water flowing through the depot.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent the contamination of storm water flowing through the depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• Storm water must be diverted away from areas where it could be contaminated.</li> </ul>	



<ul style="list-style-type: none"> <li>The storm water drainage system must be maintained (free-draining) and not contaminated by other waste sources.</li> <li>Storm water measures must be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>5</b>

Table 67: Environmental risk assessment: Noise and light pollution and visual impact

Activity: Operation of the fuel depot.	
Aspect: Generation of additional noise and light. Increased visibility of the mine due to the additional fuel depot infrastructure.	
Nature of Environmental Impact: Noise and light pollution. Visual impact on neighbours of the mine.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To minimise nuisance due to increased noise and light pollution at the fuel depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Adequate lighting must be provided at the fuel depot at night. Lights must as far as possible be angled inwards to the fuel depot and not to the exterior of the site (to the north-west, west, and south-west).</li> <li>Ensure that machinery and equipment is in proper working condition, fitted with silencing equipment if necessary.</li> <li>Keep equipment in good repair and attend to loose or rattling covers, worn bearings and broken equipment.</li> <li>Vehicle drivers must be informed about proper driving practices. Unnecessary idling, hooting or revving of engines must be avoided.</li> <li>Equipment and vehicles should be selected and maintained to minimise noise levels.</li> <li>Personnel must be provided with the relevant PPE.</li> <li>A complaints register must be kept on site. The complaints register must record the following: date when complaint was received, name of person who reported the complaint and when and how the concern was addressed.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	3
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>

Table 68: Environmental risk assessment: Waste generation

Activity: Generation, storage and removal of general and hazardous waste	
Aspect: Incorrect waste management.	
Nature of Environmental Impact: Pollution of soil-, surface water- and/or ground water.	
<b>Before Mitigation</b>	

Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To prevent soil-, surface- and/or ground water- contamination due to general and hazardous waste produced.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Waste drums, with closing lids, must be provided at the fuel depot. The drums must be colour coded or clearly labelled for the different waste types.</li> <li>Waste drums must be stored within a bunded area on an impermeable surface.</li> <li>Procedures must be drawn up for the correct handling, storage and disposal of waste.</li> <li>Employees must be trained to ensure that proper waste separation is carried out when placing waste in waste drums.</li> <li>Littering on site is not permitted.</li> <li>Waste must be removed to larger storage skips on a regular basis before the drums become full.</li> <li>General and hazardous waste must be removed and disposed of by a licensed contractor at regular intervals before storage skips overflow.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 69: Environmental risk assessment: Resource usage

Activity: Usage of resources such as electricity and water.	
Aspect: Inefficient or redundant use of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Resources such as water and electricity must be used efficiently.</li> <li>Proper environmental training and awareness. Methods to conserve resources should be conveyed to workers.</li> <li>Water must be re-used wherever possible.</li> <li>Regular maintenance and inspection of equipment, such as water pipes, to prevent leaks.</li> <li>High pressure hoses should be used, if possible, at the wash bay to conserve water.</li> <li>Lights and electrical appliances/equipment must be switched off when not in use.</li> <li>Leaking taps and hose pipes are to be repaired immediately.</li> <li>Running water taps and hosepipes are not to be left unattended.</li> <li>Regular site inspection by supervisors and monitoring of resource consumption.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1



Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 70: Environmental risk assessment: Sanitation

Activity: Ablution facilities on site (toilets, septic tank and soak away).	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil and groundwater contamination.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>12</b>
<b>Objective of Mitigation Measures</b>	
To ensure the effective operation of the septic tank system, thereby preventing contamination of the environment.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>• The septic tank system should be maintained as indicated by the supply company.</li> <li>• The ground above the septic tank system must be regularly inspected for any rise of sewage water to the surface. This could indicate a blocked or broken pipe leading to the soak away.</li> <li>• Ablution facilities should be maintained to prevent or minimize blockage and leakages.</li> <li>• Should toilets become blocked or run slowly, this should be reported and the cause investigated. This could be due to a blocked or broken pipe leading from the toilets to the septic tank system.</li> <li>• Create employee awareness about proper use of ablution facilities and the importance of proper hygiene. No cigarette butts, fats, oils, paper towels etc. may be disposed of into toilets or wash basins.</li> <li>• Toilets should have properly closing doors and supplied with toilet paper.</li> <li>• Movement of heavy vehicles above the septic tank system must be avoided as this may crack pipes.</li> <li>• Pump out the septic tank as indicated by the supply company.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>4</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>4</b>

Table 71: Environmental risk assessment: Resource use during operation

Activity: Operation of the fuel depot.	
Aspect: Inefficient or redundant use of resources.	
Nature of Environmental Impact: Wastage of valuable resources.	
<b>Before Mitigation</b>	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>5</b>
Probability	3



<b>Environmental Risk = Significance of Impact X Probability</b>	<b>15</b>
<b>Objective of Mitigation Measures</b>	
To prevent the unnecessary wastage of resources.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Regular maintenance and inspection of equipment, such as water pipes, to prevent leaks.</li> <li>Regular site inspection by supervisors.</li> <li>Proper environmental training and awareness.</li> <li>Monitoring of resource consumption.</li> <li>Implementation of technologies that can reduce resource consumption.</li> <li>Processes should be designed to save electricity and water where possible.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>3</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>3</b>

Table 72: Environmental risk assessment: Employees

Activity: Employees working at the fuel depot.	
Aspect: Employees not working with the correct equipment and/or not competent for the work.	
Nature of Environmental Impact: Worker injuries and/or fatalities.	
<b>Before Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	2
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>14</b>
<b>Objective of Mitigation Measures</b>	
To ensure that employees conduct their work in a safe manner.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Personnel must be provided with the required PPE when working at the fuel depot.</li> <li>Personnel must receive appropriate training before commencing work at the site.</li> <li>Casual workers must also receive training before commencing work at the site.</li> <li>Proof of all training must be kept on file.</li> <li>Personnel must be competent to undertake their work and must conduct all work in a responsible manner. All mine (SHE) procedures must be followed.</li> <li>A well stocked first aid box must be available at all times.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	2
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

Table 73: Environmental risk assessment: Maintenance

Activity: Maintenance and repairs at the fuel depot.	
Aspect: Incorrect maintenance practices.	
Nature of Environmental Impact: Fires or injuries to employees.	
<b>Before Mitigation</b>	

Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>7</b>
Probability	3
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>21</b>
<b>Objective of Mitigation Measures</b>	
To enable save and effective maintenance at the fuel depot.	
<b>Proposed Mitigation</b>	
<ul style="list-style-type: none"> <li>Repairs or alternations may not be undertaken whilst any equipment is in use, such as when a tank is being loaded or unloaded.</li> <li>Notices should be issued to relevant parties at the mine when maintenance is being scheduled.</li> <li>Hot work or similar hazardous work may not be undertaken inside of storage tanks before they have been inspected, a gas-free certificate has been issued, all pipelines have been disconnected and the relevant authorities have been notified. Confined-space entry permits must also first be obtained.</li> <li>In cases where a gas-free certificate has not been issued, workers may only enter the storage tanks when wearing a breathing apparatus. An observer must be present outside of the tank at all times and must immediately assist or summon assistance should the person inside of the tank collapse.</li> <li>Electrical equipment must be isolated and locked out before any repairs commence. This must be verified by an accredited person. Warning notices must be affixed or hung onto circuit breakers and/or switches to prevent accidental switching-on during repairs. An accredited person must certify that the apparatus is electrically and mechanically sound before it is brought back into use.</li> <li>Records of repairs must be kept on file.</li> <li>Maintenance and repairs must be supervised by a responsible staff member or members.</li> </ul>	
<b>After Mitigation</b>	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
<b>Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact</b>	<b>6</b>
Probability	1
<b>Environmental Risk = Significance of Impact X Probability</b>	<b>6</b>

### 8.3.3 Cumulative Impacts

Cumulative impacts refer to the situation where an activity may in itself not have a significant impact, but may become significant when added to the existing and potential impacts from similar or different activities in the area.

As the fuel depot will be situated within the confines of an operational mine, its environmental impacts, though decreased after mitigation measures have been applied, will add to the existing impacts of the mine. The different environmental impacts of the mine can be seen as having a cumulative impact on each other, thereby increasing the overall impact of the mine on the environment.

### 8.3.4 Assumptions, gaps in knowledge and uncertainties

The following assumptions were made during the environmental impact assessment:

- The fuel depot will be constructed as planned and designed by the engineers;



- The fuel depot will be operated in a responsible manner; and
- All mitigation measures proposed in the draft EMPr (Appendix D) will be implemented by the applicant to ensure that the environmental impacts are kept to a minimum.



## 13. ENVIRONMENTAL IMPACT STATEMENT

### 13.1 Summary of key findings

To ensure a reliable and cost effective supply of diesel and oil to the mine, the applicant is proposing the construction of a permanent fuel depot. Two possible locations have been earmarked for the depot. The preferred site is the location of the current temporary fuel depot and the alternative site is an area to the east of the preferred site. The natural environment at the preferred site has been completely disturbed through past mining activities. The natural vegetation of the alternative site is partially disturbed, with some vegetation cover still present onsite.

Environmental impacts will occur as a result of the construction and operational phase of the project, no matter which site is selected for the proposed fuel depot. The environmental impacts can be mitigated to a degree, but will still add to the existing impacts of the mine's activities. The following section details the main impacts of the proposed fuel depot and compares the two alternative sites to the no-go option.

### 13.2 Comparative assessment of positive and negative implications of the proposed activity and alternatives

The table below compares the positive and negative implications of the proposed fuel storage facility at the two alternative sites to those from the no-go option (current situation).

*Table 74: Comparison of the positive and negative implications of the proposed activity and alternative option*

	Fuel storage facility – proposed site	Fuel storage facility – alternative site	No-go option (current situation)
<b>Positive impacts</b>	<ul style="list-style-type: none"> <li>Economical and sustainable operation of the mine as fuel and oil will be reliably available in close proximity to the mining operations.</li> <li>Creation of additional employment opportunities during the construction and operational phases of the project.</li> <li>Stimulation of the local economy.</li> </ul>	<ul style="list-style-type: none"> <li>Economical and sustainable operation of the mine as fuel and oil will be reliably available in close proximity to the mining operations.</li> <li>Creation of additional employment opportunities during the construction and operational phases of the project.</li> <li>Stimulation of the local economy.</li> </ul>	<ul style="list-style-type: none"> <li>No new or additional environmental impacts to those currently occurring at the temporary fuel depot.</li> </ul>
<b>Negative impacts</b>	<ul style="list-style-type: none"> <li>Possible soil-, surface water- and/or groundwater-</li> </ul>	<ul style="list-style-type: none"> <li>Disturbance of vegetation due to construction activities</li> </ul>	<ul style="list-style-type: none"> <li>Uneconomical operation of the mine as vehicles must travel</li> </ul>



	contamination. • Possible generation of dust. • Light pollution. • Visual impact. • Possible fires or explosions. • Possible employee injuries.	like site clearance. • Possible soil-, surface water- and/or groundwater-contamination. • Possible generation of dust. • Light pollution. • Visual impact. • Possible fires or explosions. • Possible employee injuries.	large distances to re-fuel. • Jeopardising the continued operation of the mine and the provision of employment opportunities.
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A comparison between the two alternative sites shows that the preferred alternative will lead to less environmental disturbance as the vegetation is already in a completely disturbed state (no vegetation remaining as opposed to some vegetation present at the alternative site). Negative environmental impacts will occur as a result of the fuel depot, whether it is located at the preferred or alternative site. The fuel depot will, however, have a positive impact on the mining operation. This positive impact will translate into a positive economic impact that will outweigh the negative environmental impacts, assuming that proposed mitigation measures are implemented. The No-Go Option would entail the continued operation of the temporary fuel depot. This option is not sustainable from the mine's point of view as insufficient fuel and oil can be stored to cater for the mining operation. Also, in terms of disturbance of the site, not constructing the permanent facility at the preferred site will not result in less site disturbance, as the site is already in a disturbed state.



## 14. CONCLUSION AND RECOMMENDATION

As indicated in the previous section, the construction of the proposed fuel depot at the preferred site is favoured. Assuming that the fuel depot will be constructed at the preferred site, the following is expected: The project can be expected to have the following overall impacts:

- Design and planning phase: **Medium significance** that can be reduced to **Low significance** through the implementation of mitigation measures;
- Construction phase: **Low – Medium significance** that can be reduced to **Low significance** through the implementation of simple and effective mitigation measures; and
- Operational phase: **Medium – High significance** that can be reduced to **Low significance** through the implementation of simple and effective mitigation measures.

Whilst environmental impacts are unavoidable due to the construction and operation of the fuel depot, it must be kept in mind that the depot will be within the confines of an existing, operational mine and its environmental impacts will add to existing, significant impacts caused by the mining operation. The fuel depot will facilitate the sustainable operation of the mine, which has a significant positive impact on economy of the country and local community through the provision of a high-value natural resource and many employment opportunities.

The following recommendations are therefore made:

1. **The project should be approved and allowed to proceed.**
2. **The mitigation measures proposed above, that have also been incorporated into the EMPr in more detail, must be implemented during the planning and design; construction; operational; and decommissioning phases of the project.**
3. **A communications pathway must be established that would allow the designated ECO to accept and deal with stakeholder complaints.**
4. **Mitigation measures proposed above should be incorporated as far as possible into the operational plan for the development.**
5. **Strict monitoring and enforcement of requirements of the EMPr must be undertaken to ensure that contractors and operators adhere to these requirements.**

