mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

PROSPECTING RIGHT APPLICATION FOR THE PROSPECTING OF DIAMONDS ALLUVIAL AND DIAMONDS GENERAL NEAR SCHWEIZER-RENEKE ON THE REMAINING EXTENT OF PORTION 23 OF THE FARM MIMOSA 61, REGISTRATION DIVISION: HO, NORTH WEST PROVINCE.

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT	**PGL Boerdery (Pty) Ltd**
PREPARED BY	**Milnex 189 CC**
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FAX NO	087 231 7021
POSTAL ADDRESS:	P.O. Box 1086, Schweizer-Reneke, 2780
PHYSICAL ADDRESS:	4 Botha Street, Schweizer-Reneke, 2780
FILE REFERENCE NUMBER SAMRAD:	**NW30/5/1/1/2/12199PR**

CLAUSE

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IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE SCOPING PROCESS

1) The objective of the scoping process is to, through a consultative process—

(a) identify the relevant policies and legislation relevant to the activity;
(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
(d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
(e) identify the key issues to be addressed in the assessment phase;
(f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
(g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

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SCOPING REPORT

2) Contact Person and correspondence address

a) DETAILS OF:

i) The EAP who prepared the report

ii) Expertise of the EAP

Name of Practitioner	Qualifications	Contact details
Percy Sehaole Pr.Sci.Nat	Master's Degree in Environmental Science (refer to **Appendix 1**)	Tel No.: (018) 011 1925 Fax No. : (053) 963 2009 e-mail address: percy@milnex-sa.co.za
Lizanne Esterhuizen	Honours Degree in Environmental Science (refer to **Appendix 1**)	Tel No.: (018) 011 1925 Fax No. : (053) 963 2009 e-mail address: lizanne@milnex-sa.co.za
Danie Labuschagne	Master's Degree in Environmental Management and Geography (refer to **Appendix 1**)	Tel No.: (018) 011 1925 Fax No. : (053) 963 2009 e-mail address: danie@milnex-sa.co.za

Summary of the EAP's past experience. (Attach the EAP's curriculum vitae as **Appendix 2**)

Milnex 189 CC was contracted by **PGL Boerdery (Pty) Ltd** as the independent environmental consultant to undertake the Scoping and EIA process for a prospecting right for the prospecting of diamonds alluvial and diamonds general on the Remaining Extent of Portion 23 of the farm Mimosa 61, Registration Division: H0, North West Province. The property is located approximately 4.45 km South East of Schweizer-Reneke town. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex 189 CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex 189 CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related projects throughout South Africa. The Milnex 189 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Danie Labuschagne, Percy Sehaole & Lizanne Esterhuizen have experience consulting in the environmental field. Their key focus is on environmental assessment, advice and management and ensuring compliance to legislation and guidelines. They are currently involved in undertaking EIAs for several projects across the country (refer to **Appendix 2** for CV)

b) **THE LOCATION OF THE ACTIVITY:**

Farm Name:	1. The Remaining Extent of portion 23 of the farm Mimosa 61
Application area (Ha)	165.0814 hectares
Magisterial district:	HO
Distance and direction from nearest town	The property is located approximately 4.45 km South East of Schweizer-Reneke town
21 digit Surveyor General Code for each farm portion	1. T0HO00000000006100023

iii. Farms Co-ordinates:

Farm	Longitude	Latitude
1. The Remaining Extent of portion 23 of the farm Mimosa 61	25°20'47.74"E	27°13'23.31"S
	25°20'50.62"E	27°13'25.36"S
	25°21'17.13"E	27°13'45.11"S
	25°21'46.15"E	27°14'41.95"S
	25°22'14.85"E	27°14'43.10"S
	25°22'18.80"E	27°14'18.73"S
	25°20'55.33"E	27°13'24.82"S

c) **LOCALITY MAP** (show nearest town, scale not smaller than 1:250000 attached as **Appendix 3).**

A Locality map is attached in **Appendix 3** and on figure 1 below.

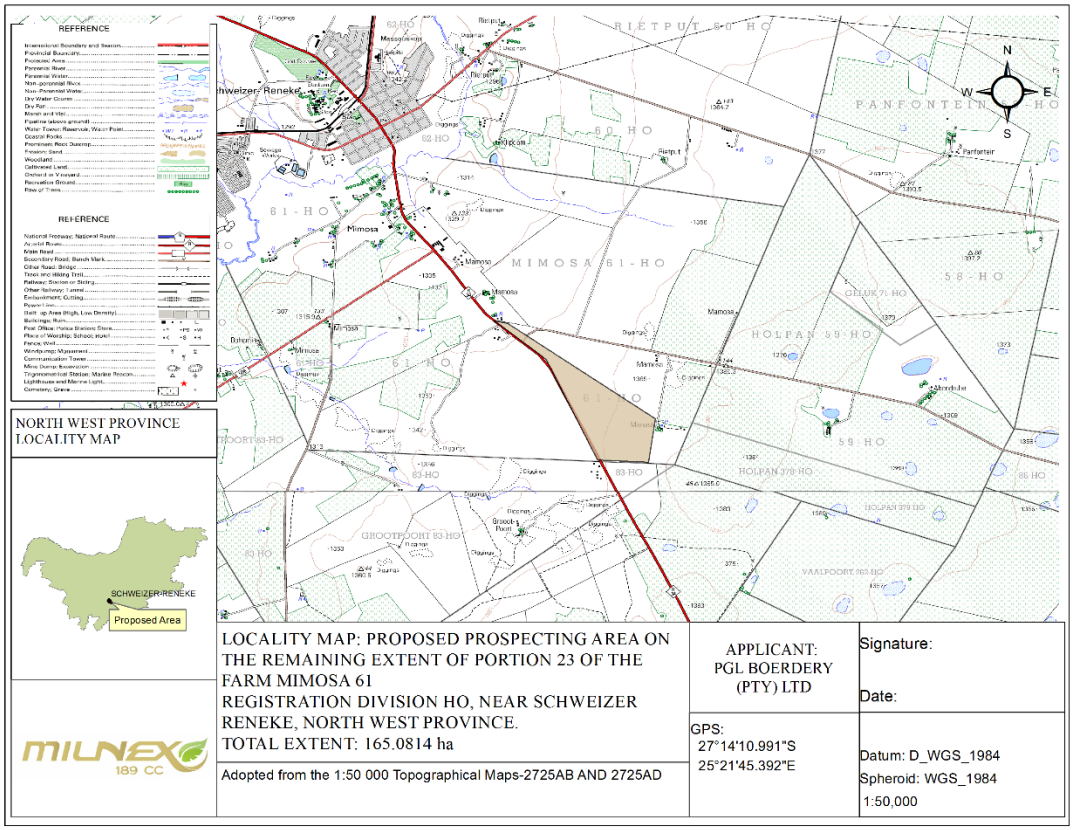


Figure 1: Locality Map

Refer to Site Plan included within **Appendix 4**.

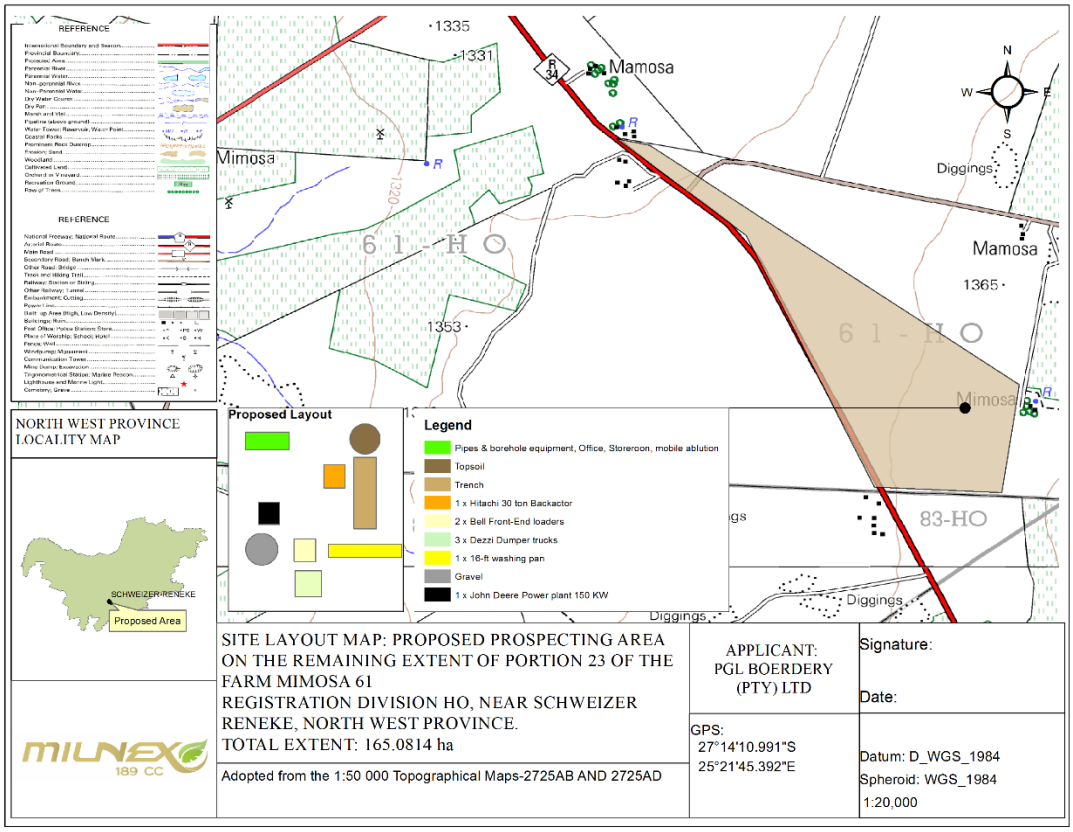


Figure 2: Site Plan

d) DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY.

i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (*GNR 324, GNR 325 or GNR 326)/NOT LISTED***
Clearance of indigenous vegetation	165.0814 hectares - Only the areas where prospecting takes place, will be cleared.	X	GNR. 325
Stockpiling op topsoil	165.0814 Ha – 30m x 20m x 0.75 m x 25 = 11 250 m³	-	-
Prospecting of Diamond Alluvial & Diamonds General - Excavations	165.0814 ha– 3m x 2m x 2m (50 pits), 20m x 30m x 1.5m (25 trenches)	X	GNR. 325
Processing Plant	1 x 16ft washing pans – 24 750 tons to be washed.	X	-

Listing Notices: 2017 Regulations

Description of the overall activity. (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)	1. ***Listing Notice GNR 325, Activity 15***:*"The clearance of an area of 20 hectares or more, of indigenous vegetation."* – Random indigenous vegetation clearance of over a 165.0814 hectares area. 2. **Listing Notice GNR 325, Activity 19**: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [,]; or (b) [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] the primary processing of a mineral resource including winning,

	extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies. 3. **Listing Notice GNR 325, Activity 20**: "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource[,] ; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies – Prospecting right with bulk samples for the mining of Diamond Alluvial (DA) and Diamond General (D) including associated infrastructure, structure and earthworks.

ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place e.g. aerial photography, desktop studies, aeromagnetic surveys, etc)

Phase 1: Site Visit

The applicant will appoint Dr Deon Tobias Vermaakt as the project geologist to conduct the site visit with him. It is foreseen that more than one site visit will be conducted. The purpose of the site visit shall be to familiarize the parties of the areas including the topography and the general geology before the invasive prospecting activities commence.

During the site visit, the applicant shall assess the roads, the infrastructure that may be used and if it will be necessary to construct any infrastructure. From a site visit much more details shall be obtained about the process to be followed to properly conduct the prospecting activities than from near desktop studies.

Site visit shall assist the applicant to make a better assessment of the prospecting work to be done during the respective phases where the prospecting work shall be commenced with and what additional equipment may be required to properly conduct the prospecting activities.

The site visit shall also assist the applicant to assess prospecting information of earlier prospecting activities. During this process the applicant shall also review all documentation that has received in relation to the geology of the area.

A site visit will be done within 90 days after the prospecting right was executed

Phase 2: Desktop Studies

Desktops studies would be undertaken after the site visit was done to determine the target areas including the identification of any infrastructure to be built and any potential problems that may need to be addressed during the prospecting activities.

Both these two phases will be Non-Invasive and restricted to a desktop study which will include literature survey, Interpretation of aerial photographs, satellite images and ground validation of targets.

During the desktop studies the applicant with the appointed geologist shall study all available geological information and historical data about the previous prospecting and mining activities.

It is hope that for the desktop studies, a preliminary analysis of the operating environment shall be obtained. The desktop studies may improve in project efficiency and reduced the cost by providing a clearer understanding of the challenges the prospecting activities may entail.

The desktop studies shall be finalized by the compilation and the analysis of pre-existing relevant data. The preliminary operating areas shall be identified for these studies. A working document shall be drafted by the geologist after the finalization of the desktop studies.

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc)

Phase 3: Pitting

A trial pit / test pit or inspection pit investigation is a highly effective way of obtaining data on the sub surface soil and rock conditions which underlie a prospecting sight. It allows for the various soils and rock types to be locked, the soil to be sampled and a preliminary assessment to be made.

Pits shall be dug, locked, sampled and backfilled. To dig the pits, the applicant shall make use of the systems of Dr Deon Tobias Vermaakt, the appointed project geologist.

The applicant shall at the end of the pitting process have locked the pits with the following information:

- A description of the soil and rock types from ground level to the base of the pits;
- Record of rock head depth and refusal depth, a list of where the samples will be taken, a record of where ground water seepage will be recorded;
- A general note of the geologist and conditions in the vicinity of the test pits

A general note of the geologist and conditions in the vicinity of the test pit. **It is planned that 50 pits will be dug (it may be less depending on the results) at an extent of 3m (length) x 2m (breath) x 2m (depth).**

Phase 4: Trenches

The plant/ bulk sampling technique shall be that of a typical South African alluvial diamond mining operation. The method is a strip mining process with oversize material and tailings recovered from the plant will be used as backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the treatment facility using dump trucks.

The bulk sampling operation will be conducted using a fleet of conventional open pit mining equipment compromising of dump trucks supported by appropriate excavators and front-end- loaders. All equipment is planned to be diesel driven.

Before excavation commences vegetation shall be cleared from the proposed bulk sampling block. These shall be done as per environmental regulations. Top soil will then be removed and stored separately for later used for rehabilitation.

The bulk samples will be made in the form of box cuts whereby the dimensions of these individual box cuts on average are to be 20m wide x 30m long x 1.5m deep.

Gravel will be removed by excavators and will be loaded directly into dump trucks. Ore will be hauled to the screening plant. The material will be screened where after the screened material will be moved to the processing plant where the gravel will be processed. Concentrate will be moved to the sorting plant where the concentrate will be sorted. It is estimated that the bulk sampling shall take approximately 12 months consisting of about 25 trenches to be excavated.

Portable Water Supply

Additional water requirements related to the portable water supply for employees and workers will be supplied.

Water uses:

Water uses under section 21 a-k of the NWA may be triggered, thus a Water Use Licence Application (WULA) will need to be lodged with the department of Water & Sanitation (DWS).

Table 1: Water Use Pan Size specifications for Alluvial Diamond Mining (DWS NC & FS, 2001).

Pan size	Water/hour (m^3)	Water/day(m^3)	Gravel/hour (tons)	Gravel/day (ton)
16	17	170	60	600

Since 1 x 16 feet washing pans will be used, the amount of water for the pans will be 17 000 L/hour from which 30% is re-used.

Ablution

Chemical toilets shall be used, no french drains and pits shall be permitted.

Storage of dangerous goods

During the prospecting activities, limited quantities of diesel and fuel, oil and lubricants will be stored on site. These goods should be placed in a bunded area one and a half times the volume of the total amount of goods to be stored.

Prospecting activities and phases

Please find the Prospecting Work Programme attached as **Appendix 8**.

e) POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	**REFERENCE WHERE APPLIED**
The Constitution of South Africa (Act No. 108 of 1996)	-
The National Environmental Management Act (Act No. 107 of 1998)	S24(1) of NEMA S28(1) of NEMA
The National Water Act (Act No. 36 of 1998)	S21 (a)(b) of NWA
Management: Air Quality Act (Act No. 39 of 2004)	S21
The National Heritage Resources Act	-

(Act No. 25 of 1999)	
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	-
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	-
National Infrastructure Plan	-
North West Province Growth and Development Strategy	-
Dr Ruth Segomotsi Mompati District Municipality Integrated Development Plan (IDP)	-
Mamusa Local Municipality Integrated Development Plan (IDP) Review	-
National Forest Act (Act 84 of 1998) (NFA)	
National Veld & Forest Fires Act (Act 101 of 1998)	

f) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Mining has played a vital role in the economy of South Africa for over 100 years. In 2015 the mining industry contributed R286 billion towards South African Gross Domestic Product (GDP) representing 7.1% of overall GDP. Mining is a significant contributor to employment in the nation, with 457 698 individuals directly employed by the sector in 2015. This represents just over 3% of all employed nationally. Diamond mining has 17 885 direct employees. (Chamber of Mines, South Africa, 6:2016)

Diamonds, arguably the ultimate luxury mineral, comprise an intricate lattice of carbon atoms, a crystalline structure that makes them harder than any other form in nature. This characteristic makes diamonds not only popular in jewellery, but also desirable in high-tech cutting, grinding and polishing tools. (Chamber of Mines, South Africa, 12:2016)

Prospecting rights and mining permits have been applied for all around the proposed site, and the outcome of that studies suggest the possibility of encountering further diamond deposits.

The North West Province is an important supplier of rough diamonds to the international market and is a large corner stone of the South African economy.

g) PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.

The environmental authorisation is required for a minimum period of 5 years.

h) DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED SITE.

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

Each of the phases are dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond bulk sampling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in Appendix 3.

i) Details of all alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;

(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

(a) The property on which or location where it is proposed to undertake the activity

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on the Remaining Extent of Portion 23 of the farm Mimosa 61, Registration Division: H0, North West Province, were identified.

(b) The type of activity to be undertaken

In terms of the technologies proposed, these have been chosen based on long term success in terms of their prospecting history. The prospecting activities proposed in the Prospecting Work Programme is dependent on the preceding phase, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

(c) The design or layout of the activity

The location of the activities will be determined based on the location of the prospecting activities, which will only be determined during phase 1 and 2 of the Prospecting Work Programme (see **Appendix 9** for the Programme).

The farm consists trees and natural vegetations, there is also a house, farm stalls and livestock kraals. All infrastructure will be temporary and/or mobile.

(d) The technology to be used in the activity

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (**Appendix 9**) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed mining activity, will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. Please find the Prospecting Work Programme attached as **Appendix 9**.

Pros & Cons of the alternative **Dense Media Separation (DMS)**

Advantages	**Disadvantages**
DMS plants is used mostly for kimberlite deposits	10 times more expensive than Rotary pan
	Water consumption is high
	Operating costs are expensive

In a Dense Media Separation (DMS) plant, powdered ferrosilicon (an alloy of iron and silicone) is suspended in water to form a fluid near the density of diamond (3.52 g/cm3), to which the diamond bearing material is added to begin the separation process of the heavier minerals from the lighter material. Additional separation of the denser material occurs by centrifuge in “cyclones” that swirl the mixture at low and high speeds, forcing the diamonds and other dense minerals to the walls and then out the bottom of the cyclone. Waste water rises at the center of the cyclones and is sucked out and screened to remove

waste particles. The DMS process results in a concentrate that generally weighs less than one percent of the original material fed into the plant at the beginning of the process.

Pros & Cons of the alternative **Rotary Pan Plants**

Advantages	**Disadvantages**
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	
Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

In a Rotary Pan plant, crushed ore, when mining kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called “puddle” which has a density in the 1.3 to 1.5 g/cm3 range. The mix is stirred in the pan by angled rotating “teeth”. The heavier minerals, or “concentrate”, settle to the bottom and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Both methods are in actual fact used for bulk material reduction and require a further process for the final diamond recovery however, for this project the Rotary Pan will be used.

(e) The operational aspects of the activity

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

The activities will commence with a site investigation and desktop studies, which will comprise of non-invasive techniques. This manner of survey will ensure that the applicant can clearly delineate areas which are suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcome of the desktop studies and site investigation, pits will be dug by an excavator for the purpouse of soil sampling. If gravel is found, the applicant wil determine the the composition and quality of the gravel.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and wash the gravel. It will be washed by a 10-18 feet washing pan to determine diamond proceeds per 100 tons of gravel.

All data will be consolidated and processed to determine the diamond bearing resources on the property. This will be a continuous process throughout the prospecting work programme.

No feasible alternatives to the pitting and trenching method currently exists. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

(f) The option of not implementing the activity

The option of not approving the activities will result in a significat loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utalize these reserves for future phases will be lost.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

1. Advertisement and Notices

Newspaper advertisement

Since the proposed development is unlikely to result in any impacts that extent beyond the municipal area where it is located, it was deemed sufficient to advertise in a local newspaper. An advertisement was placed in English in the local newspaper (Stellalander) (see **Appendix 6**) on **13 September 2017**, notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

Site notices

Site notices were placed (as anticipated on the coordinates below) on site in English on **8 September 2017** to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs will be given the opportunity to raise comments. Photographic evidence of the site notices will be included in **Appendix 6**. Below are the coordinates where the site notices were placed

Figure 3: Site notice co-ordinates

Direct notification and circulation of Scoping Report to identified I&APs

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Scoping Report via registered post on **6 September 2017** and were requested to submit comments by **6 October 2017**. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- The Department of Rural, Environmental and Agricultural Development (READ), North West
- The Department of Water & Sanitation (DWS)
- The Department of Mineral Resources
- The North West Department of Agriculture
- The Provincial Heritage Resources Agency (PHRA), North West
- Department of Public Works, Roads and Transport in NW (DPWRT)
- Department of Agriculture, Forestry, and Fisheries (DAF)
- Department of Agriculture, Forestry, and Fisheries (DAFF)
- The Wildlife and Environment Society of South Africa (WESSA)
- Dr. Ruth Segomotsi Mompati District Municipality District Municipality
- The Municipal Manager at the Mamusa Local Municipality
- The Local Councilor at the Mamusa Hills Local Municipality
- NW Department of Rural Development & Land Reform: Land Restitution Support

It is expected from I&APs to provide their inputs and comments within 30 days after receipt of the notification or Scoping Report. When the comment period ends, all comments received will be included in the final Scoping and EIA Report.

Direct notification of surrounding land owners and occupiers

Written notices and the availability of the Scoping Report are also provided to all surrounding land owners and occupiers on **6 September 2017**. The surrounding land owners were given the opportunity to raise comments by **6 October 2017**. For a list of surrounding land owners see **Appendix 6**.

2. Consultation

The Public Meeting was scheduled for **21 September 2017 at 12:30pm–13:30pm** on the R34 at the Hartsfontein/Kingswood board approximately 4km out of Schweizer-Reneke. The coordinates and directions (figure1) of the public meeting follows below.

Coordinates

27°13'34.93"S
25°21'3.89"E

Directions to Public Meeting from Schweizer-Reneke

- In Schweizer-Reneke head towards Bloemhof on the R34 for approximately 4 km
- After approximately 4km look out for the Hartsfontein/Kingswood board where Milnex personnel.

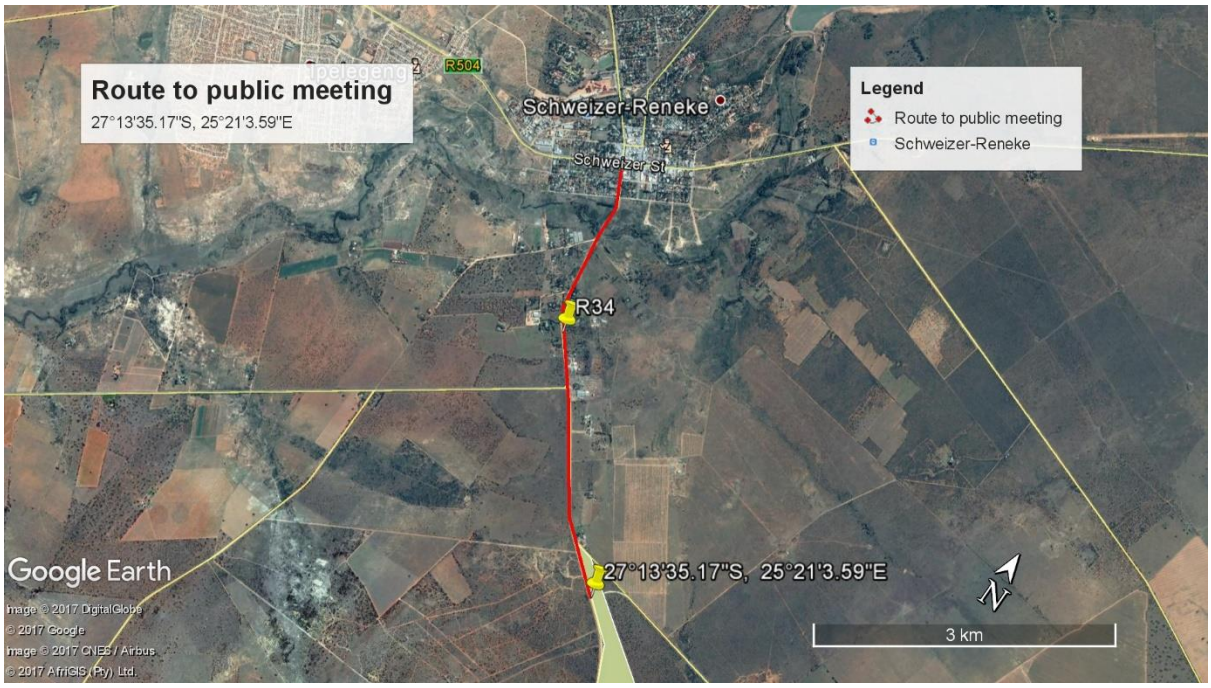


Figure 4: Directions from Schweizer-Reneke to the public meeting

The public meeting is an opportunity to share information regarding the proposed development and provide I&APs with an opportunity to raise any issues and provide comments. The following key stakeholders and surrounding land owners were also directly informed of the public meeting via registered post **6 September 2017**:

Table 1: List of Stakeholders, Land owners, & surrounding land owners

Stakeholders	Land owners	Surrounding Land owner
The Department of Rural, Environmental and Agricultural Development (READ), North West	P.G.L Boerdery Pty Ltd	Barend Jacobus Gnade
The Department of Water & Sanitation (DWS)		Johanna Maria Schmulian
NW Department of Agriculture (Dept. of Agric.)		C C Trust
Provincial Heritage Resources Agency (PHRA) North West		P G L Boerdery Pty Ltd
Department of Public Works, Roads and Transport in NW (DPWRT)		Daniel Petrus Johannes Goosen
Department of Mineral Resources – North West (DMR)		Hendrik Petrus Jacobus Viljoen
Department of Agriculture, Forestry, and Fisheries (DAF)		Bragbukacee Trust
Department of Agriculture, Forestry, and Fisheries (DAFF)		
Department of Rural development and Land reform		
Dr. Ruth Segomotsi Mompati District Municipality		
The Municipal Manager at the Mamusa Local Municipality		

Stakeholders	Land owners	Surrounding Land owner
The Local Councilor at the Mamusa Local Municipality		

3. Public Meeting

Please note that the stakeholders & interested and affected parties were informed about the proposed project with the use of site notices, press advertisement and registered letters.

Milnex representatives Mr. Mandi Sibanyoni attended the meeting & no I&AP attended the meeting.

Attached as **Appendix 6** is the attendance register for the meeting.

4. Issues Raised by Interested and Affected Parties

Comments received during this period are attached as comment & response report as well as populated in the table of summary of issues raised.

i. Summary of issues raised by I&Aps

(Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
Organisation	**Contact person**				
Land Owner					
Mimosa 23/61	P G L Boerdery Pty Ltd		No comments received		
Landowners or lawful occupiers on adjacent properties					
Mimosa 4/61	Mr. W Pienaar (Attorney) represents Surrounding Landowner 1: Mr. Barend Jacobus Gnade	15/09/2017 29/09/2017	Fax received on 15/09/2017 stating that Mr. Gnade is a surrounding landowner. He requests a copy of the Scoping Report and Milnex 189 CC can send the document to Mr. W Pienaar.	The draft Scoping Report was faxed on the 29/09/2017.	
		10/10/2017	Received a call on 10/10/2017 requesting that the documents be sent to them. Milnex replied by saying that the draft Scoping Report was emailed to them on the 29th of September 2017. They then requested that the documents be emailed to them.	Email sent 10/10/2017 with draft Scoping Report attached and proof that the document was faxed.	
				Emailed received on 10/10/2017 from the Outlook System Administrator stating that the email was Undeliverable.	
				Email sent 11/10/2017 at 08:58 with proof of fax and proof that the email couldn't deliver, states the following: A lady from your office called yesterday and asked that the draft Scoping Report be sent to you. We mentioned to her that we faxed the	

				document on the 29th of September 2017. Please see the attached document as proof. Following the above mentioned she asked that we email the draft Scoping Report. The email we sent yesterday failed, please see the attached notification. Below is the dropbox link for project information, please follow the link. https://www.dropbox.com/sh/q561v9d4oblmjaf/AABXrc3fs7vrmYrvAnoUHLvka?dl=0 We hope you receive the requested information.	
		11/10/2017		Emailed received on 11/10/2017 at 08:59 from the Outlook System Administrator stating that the email was Undeliverable.	
				Email was sent again on the 11/10/2017 at 11:00 with proof of the fax sent as well as the proof that the email was undeliverable. This email was the same as the email sent at 08:58 the same day.	
Mimosa 38/61	Johanna Maria Schmulian		No comments received		
Mimosa 39/61	C C Trust		No comments received		
Mimosa 40/61 Grootpoort 4/83	P G L Boerdery Pty Ltd		No comments received		
Mimosa 22/61	Daniel Petrus Johannes Goosen		No comments received		
Grootpoort 3/83	Hendrik Petrus Jacobus Viljoen		No comments received		
Mimosa 25/61	Bragbukacee Trust		No comments received		

The Municipality in which jurisdiction the development is located					
Mamusa Local Municipality	Municipal Manager: Mr Ruben Gincane		No comments received		
Municipal councilor of the ward in which the site is located					
Mamusa Local Municipality	Ward 7 Councillor		No comments received		
Organs of state having jurisdiction					
Department of Rural, Environmental and Agricultural Development, North West (READ)	Mrs. Ellis Thebe	14/09/2017 19/09/2017	Letter dated 14/09/2017 request that a hard copy document be submitted to their offices. The request has been assigned to Mr. Sammy Mabula and the file reference number is NWP/DMR/123/2017.	A hard copy document was couriered on 19/09/2017 for comments.	
	Mr. Sammy Mabula	03/10/2017	Email received 03/10/2017 at 08:30 states the following: *"Kindly note that on 02 October 2017, I received another scoping report (NWP/DMR/123/2017) from Milnex 189 cc and since we will be out on site today inspecting an area that you previous failed to commit or honor any of the proposed appointments. I saw it convenient to cover other sites in the area (i.e. NWP/DMR/123/2017). To comply to the 30 days commenting period the site inspection should be conducted at least within 7 days of the receipt of report."*	Email sent 03/10/2017 at 14:29 ask when will he like to go for the site visit for NWP/DMR/123/2017 (DMR ref: NC30/5/1/1/2/11628PR)?	
				Email sent 03/10/2017 at 14:32 apologises for referring to the wrong DMR reference number and provides the right DMR reference number, NW30/5/1/1/2/12199PR.	
		03/10/2017 09/10/2017	Email received on 03/10/2017 at 15:40 states the Mr. Sammy would like to conduct the site visit on 10 October 2017.	Email sent 09/10/2017 follows after a telephonic conversation with Mr. Sammy and states that the site visit is arranged for 10 October 2017 at 14:00. Sammy will meet Tim of Milnex 189 CC at the Milnex 189 CC office in Schweizer-Reneke and from there they will go to the Remaining Extent of Portion 23 of the farm Mimosa 61.	
The Department of Water & Sanitation (DWS)	Me. Lindiwe Franks	04/10/2017		A CD with project information was couriered on 04/10/2017 to the Department for comments.	
NW Department of Agriculture (Dept. of Agric.)	Ms. Bonolo Mohlakoana		No comments received		

Provincial Heritage Resources Agency (PHRA) North West	Mr. Motlhabane Mosiane	.	No comments received		
Department of Public Works, Roads and Transport in NW (DPWRT)	HOD: Ms. Mulangaphuma		No comments received		
Department of Mineral Resources – North West (DMR)	Thilivhali Meregi	05/09/2017	Letter dated 05/09/2017 acknowledges receipt of the application and states the following: <u>Comment 5</u> Milnex 189 CC is required to consult with every organ of state the administers a law relating to a matter affecting the environment relevant to this application is terms of Chapter 3, Regualtion 7(2) read with Chapter 6, Regulation 41(b). This include but is not limited to the National DAFF, READ, DWS and PHRA.		
Department of Agriculture, Forestry, and Fisheries (DAF)	Mr. Maurice Vukeya & Mrs Mpho Gumula		No comments received		
Department of Agriculture, Forestry, and Fisheries (DAFF)	To whom it may concern		No comments received		
Department of Rural development and Land reform	Land Claims Commissioner: Regional Offices, Chief Director: Mr Lengane Bogatsu	28/09/2017 02/10/2017	Letter dated 02/10/2017 states that the request is acknowledged and Ms. K.W. Mothupi should be contacted if Milnex 189 CC requires any additional information.	Emails sent 28/09/2017 is proof of land claims consultation.	
Other–					
Dr. Ruth Segomotsi Mompati District Municipality	Municipal Manager: Zebo Tshetlho		No comments received		
WESSA (National Office)	To whom it may concern		No comments received		

ii. The Environmental attributes associated with the sites

(1) Baseline Environment

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, Soil, land capability and agricultural potential, climate and the visual landscape.

According to the data for protected areas the proposed portion does not fall within a formally protected area, however is does fall within the Schweizer-Reneke Bushveld threatened ecosystem.

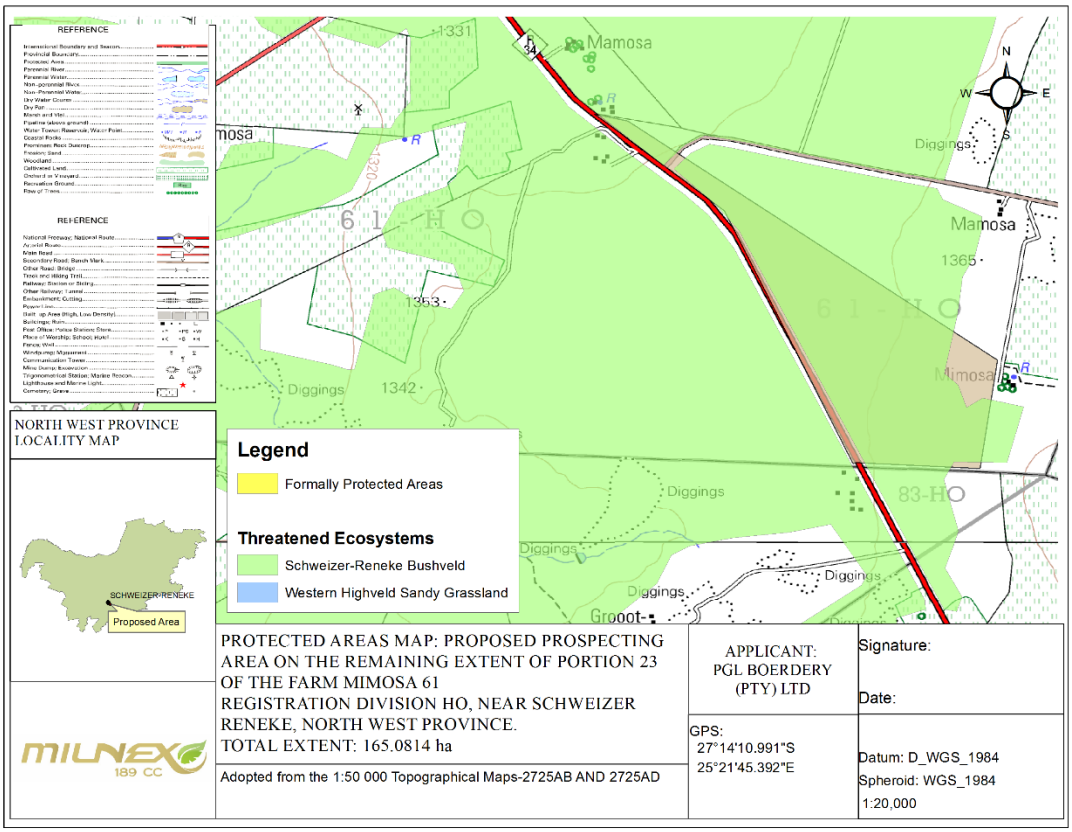


Figure 5: Protected Area

<u>Camel Thorn tree & Shepherd tree</u>

Camel Thorn trees & Shepherd tree may be found on site. Such trees amongst others are **protected tree species** under the National Forests Act No. 84 of 1998 are listed in Table 4.9. In terms of a part of section 51(1) of Act No. 84 of 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted by the Minister.

In cases where the trees will need to be cut, disturbed, damaged or destroyed or possessed, collected, removed, transported, exported, purchased, sold or donated a flora permit will be applied for.

(a) Type of environment affected by the proposed activity.
(its current geographical, physical, biological, socio- economic, and cultural character).

Geology and Soils

According to the Council of Geosciences, Alluvial mining in the area started in the early 19th century. Renewed interest in the mining of alluvial diamonds was generated by the El Niño related drought of 1974 when many farmers turned to diamond mining. Much larger volumes of gravel could be moved and greater depths of gravel were reached owing to modern earth moving and sorting equipment.

Diamondiferous gravels in the North West Province are distributed predominantly in three major areas, namely the area underlain by dolomite from the east of Ventersdorp towards Lichtenburg and Bakerville and beyond (VLB), the Lichtenburg–Delareyville–Bloemhof–Klerksdorp–Lichtenburg area (LDBKL), which is mostly underlain by Ventersdorp Supergroup basalt and Dwyka Group tillite and the area associated with the Vaal River terraces and gravels. Diamondiferous gravels are concentrated along straight and meandering runs, sinkholes and dolines in the VLB area. In the LDBKL area, the diamonds are present in ancient and current river channels, terraces or banks and as elluvial and colluvial deposits. Along the Vaal River, the diamonds occur along the gravels of the current river and along the older gravels present along ancient terraces.

There are various operational alluvial diamond mines adjacent to these properties such as on which applications for prospecting rights have been lodged. In house information exist which substantiate the reasons for this application.

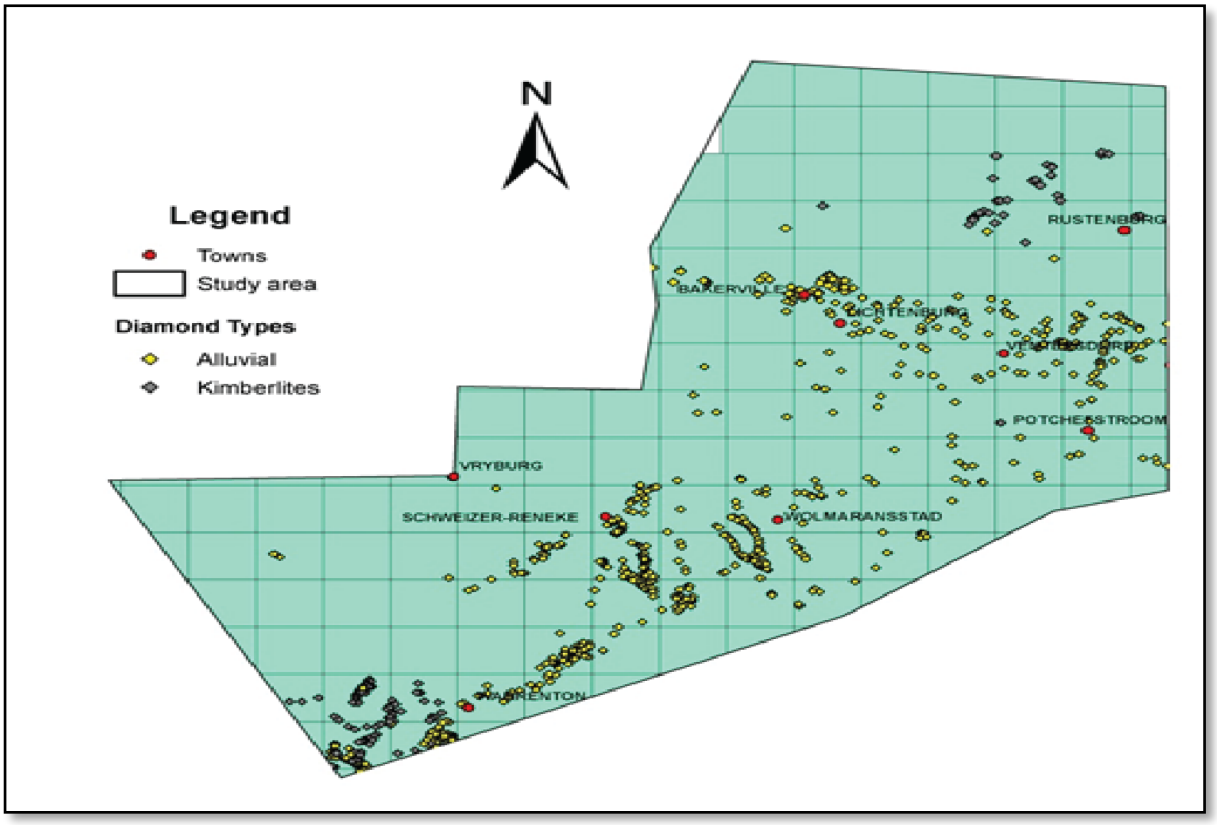


Figure 6: Map showing diamond occurrences in North West province

Ecological habitat and landscape features

The proposed area falls within vegetation unit SVk 3, which is known as the Schweizer-Reneke Bushveld. Schweizer-Reneke Bushveld is part of the Eastern Kalahari Bushveld Bioregion, which is a sub-bioregion for the Savanna Biome.

According to Mucina and Rutherford (2006:516), the Schweizer-Reneke Bushveld vegetation covers the North West Province. Schweizer-Reneke area in the east to Amalia in the west and from the farming areas of around Broedersput in the north to Never Mind (Christiana District) in the south. This Bushveld is situated on an altitude of 1250m – 1400m.

The region is characterised by plains, slightly undulating plains and some hills, supporting open woodland with a fairly dense shrub layer, with *Acacia erioloba, A. karroo, A. tortilis, Rhus lancea* trees and *A. hebeclada, Diospyros lycioides, Grewia flava, Tarchonanthus camphoratus* shrubs.

Mucina and Rutherford (2006:516) also states that the conservation of this Bushveld type, is endangered with a target of 16%. None conserved in statutory conservation areas. Largely (42%) transformed almost all by cultivation. Erosion is very low.

See **Appendix 7 & Figure 7** for the Ecological desktop study done.

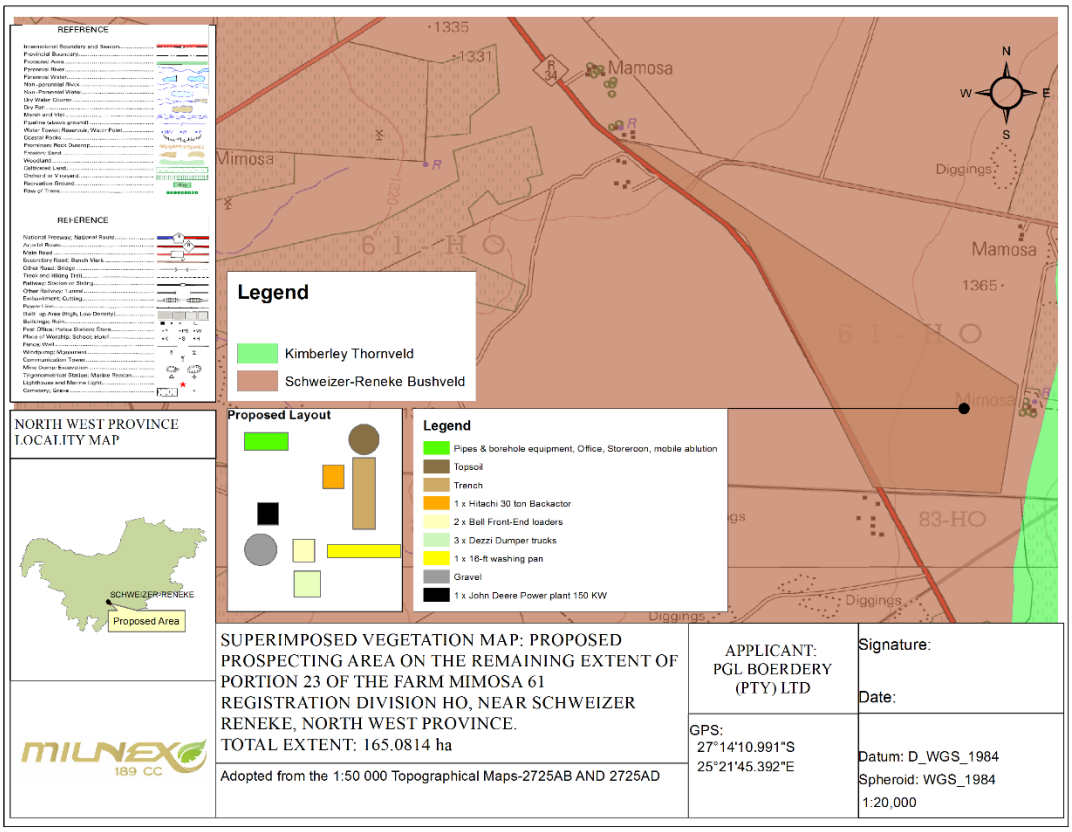
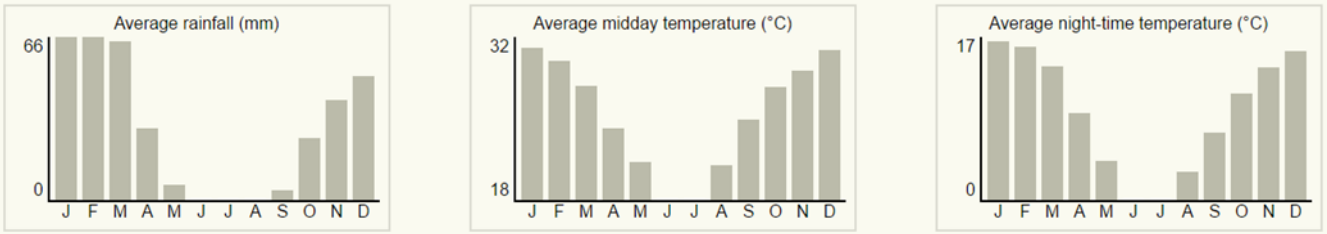


Figure 7: Vegetation map

Land capability and agricultural potential

- Climate and water availability

Schweizer-Reneke normally receives about 350mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Schweizer-Reneke per month. It receives the lowest rainfall (0mm) in June and the highest (66mm) in January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Schweizer-reneke range from 18°C in June to 31°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (SAexplorer:2014).



- Agricultural / land capability

Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification, on the 8 category scale, of Class 5 – which falls within non-arable. Land in Class 5 has little or no erosion hazard but have other limitations impractical to remove that limit its use

largely to pasture, range, woodland or wildlife food and cover. These limitations restrict the kind of plants that can be grown and prevent normal tillage of cultivated crops.

Refer to Land capability map attached as **Appendix 5 & figure 8 below.**

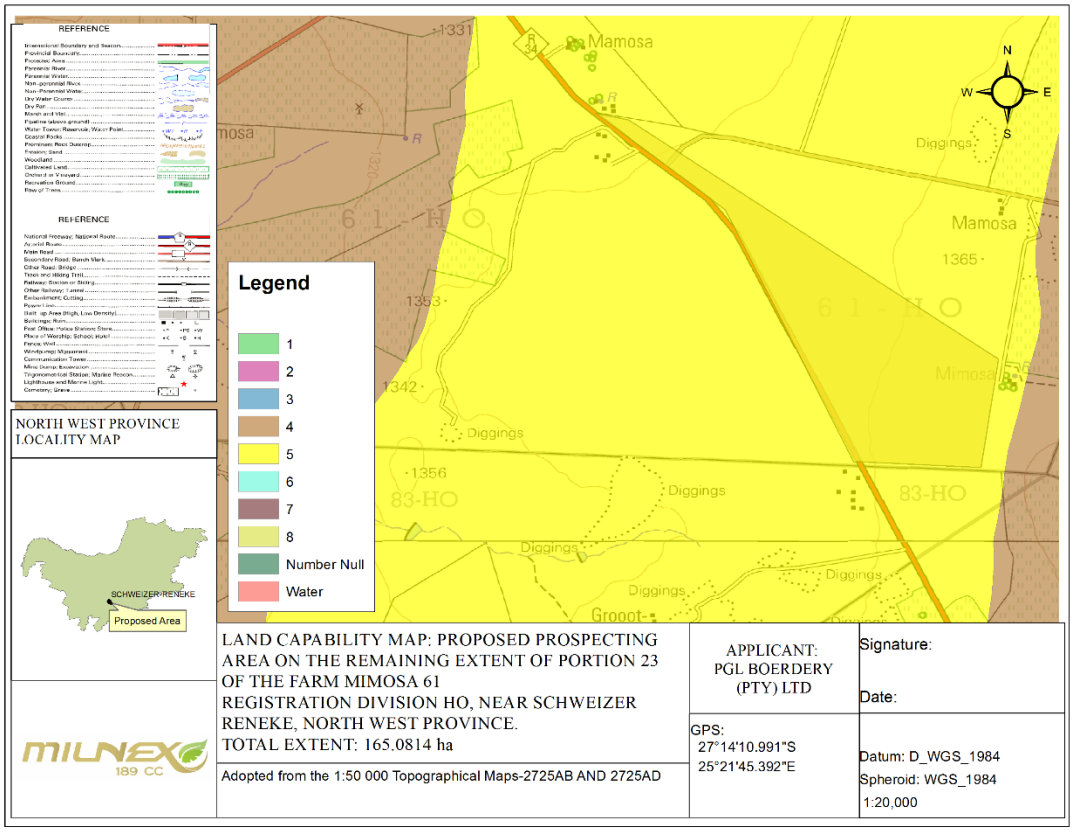


Figure 8: Land capability

Critical Biodiversity Area

The Department of Rural, Environmental and Agriculture Development (READ) defines Critical Biodiversity Areas and Ecological Support Areas as follows:

Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near-natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses.

Ecological Support Areas (ESAs) are terrestrial and aquatic areas that are not essential for meeting biodiversity representation targets (thresholds), but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration. The degree or extent of restriction on land use and resource use in these areas may be lower than that recommended for CBAs.

According to the data for Critical Biodiversity Areas, the proposed portion falls within CBA type 1. According to the North West Biodiversity Sector Plan (2015) the land management objectives for above mentioned are as follows:

Critical Biodiversity Area type 1 (CBA 1)

Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process:

- Ecosystems and species fully or largely intact and undisturbed.
- These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost then targets will not be met.
- These are biodiversity features that are at, or beyond, their limits of acceptable change.

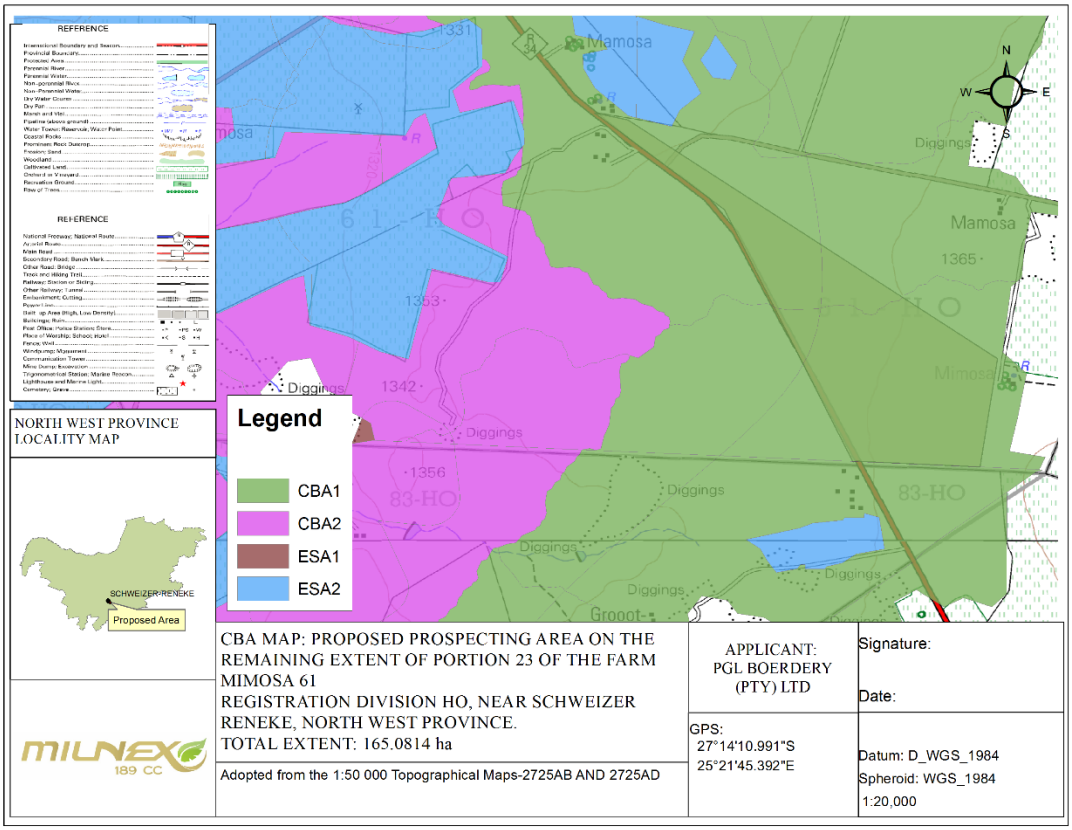


Figure 9: Critical Biodiversity Areas Map.

According to a matrix of recommended land use zones and associated activities in relation to the CBA map categories) prospecting is not permitted and actively discouraged in CBA 1 areas.

NO	LAND USE ZONE	ASSOCIATED LAND USE ACTIVITIES	PA/CA	CBA1	CBA2	ESA1	ESA2	ONA
15	Quarrying and Mining	Prospecting and Underground Mining	N	N	R	R	R	R
		Quarrying and open-cast mining (includes surface mining, dumping & dredging).	N	N	N	N	N	R
		Hydraulic Fracturing (fracking)	N	N	N	R	R	R

Notes:

1. Guidelines apply only to natural or near-natural land with natural vegetation cover within each category (on site).
2. Y = YES, permitted and actively encouraged activity;
3. N = NO, not permitted, actively discouraged activity; and,
4. R = RESTRICTED to compulsory, site-specific conditions & controls when unavoidable, not usually permitted.

(North West Biodiversity Sector Plan, 2015:57)

Sensitive area for Mine

According to the Mining of Biodiversity Guidelines, biodiversity priority areas sensitive to the impacts of mining are categorized into four categories (please see the table below).

Category	Description
A	Legally protected
B	Highest biodiversity importance
C	High biodiversity importance
D	Moderate biodiversity importance

The purpose is to identify and categorize biodiversity priority areas sensitive to the impacts of mining in order to support mainstreaming of biodiversity issues in decision making in the mining sector.

According to the mine guide map, the proposed area falls within category B and C, which states the biodiversity priority areas is as follows:

Highest biodiversity importance (B)

These areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being. The Biodiversity priority areas is as follows:

- Critically endangered and endangered ecosystems
- Critical Biodiversity Areas (or equivalent areas) from provincial spatial biodiversity plans
- River and wetland Freshwater Ecosystem Priority Areas (FEPAs), and a 1km buffer around these FEPAs
- Ramsar Sites

High biodiversity importance (C)

These areas are important for conserving biodiversity, for supporting or buffering other biodiversity priority areas, for maintaining important ecosystem services for particular communities or the country as a whole. The Biodiversity priority areas is as follows:

- Protected area buffers (including buffers around National Parks, World Heritage Sites* and Nature Reserves)
- Transfrontier Conservation Areas (remaining areas outside of formally proclaimed protected areas)
- Other identified priorities from provincial spatial biodiversity plans
- High water yield areas

- Coastal Protection Zone
- Estuarine functional zone

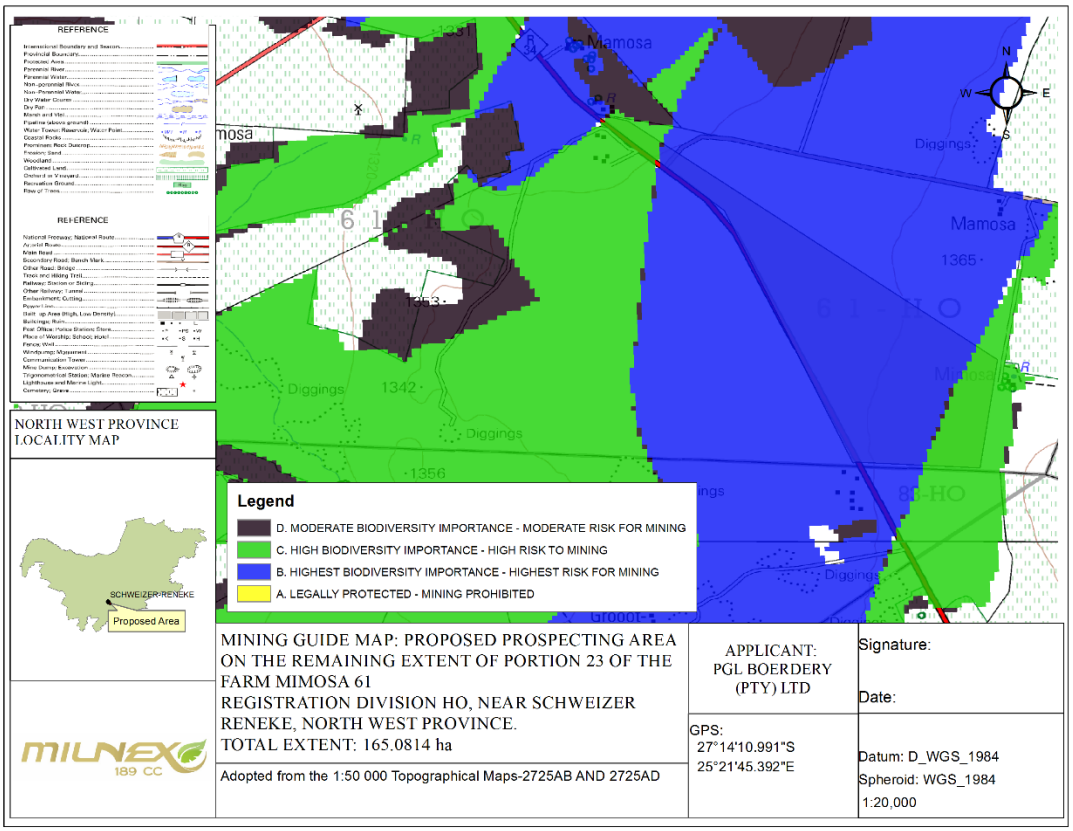


Figure 10: Sensitive area for mine

Wetland Areas

Wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil (from the South African National Water Act; Act No. 36 of 1998).

The maps below depict all wetland areas on the proposed area. The proposed area consists of no wetlands. The wetland vegetation type falls within the Eastern Kalahari Bushveld Group 2.

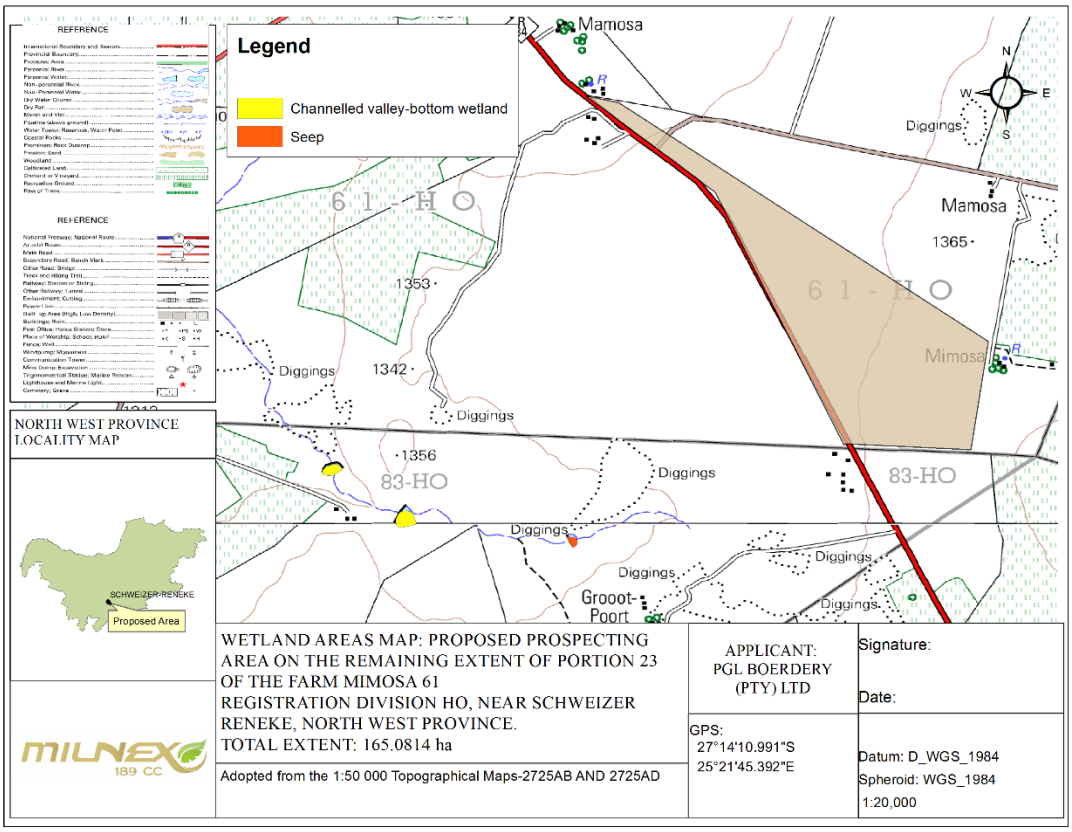


Figure 11: Wetland types present on site

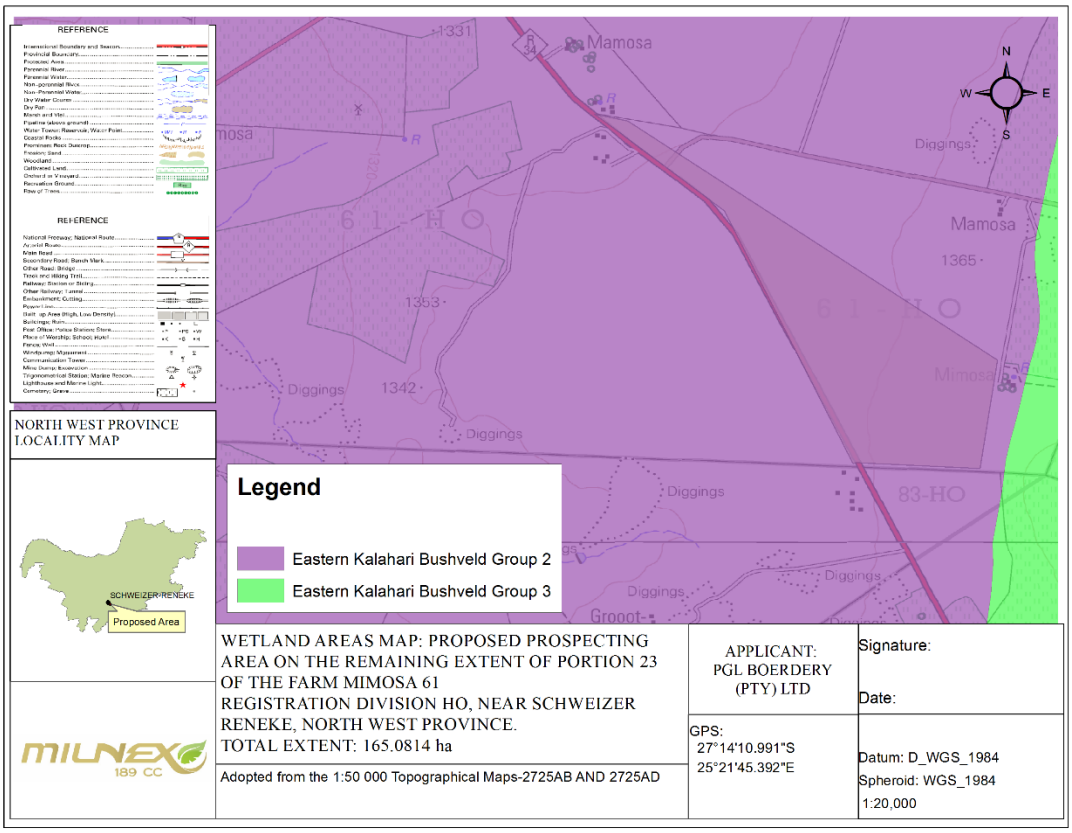


Figure 12: Wetland vegetation type

Description of the socio-economic environment

- Socio-economic conditions

According to the 2014/1 Mamusa Local Municipality's IDP review the municipal area comprises a total area of 3 681 km². The land mass is 7.8% of the total area of the Dr. Ruth S Mompati District Municipality. The administrative Centre of the municipality is in the rural area of Schweizer-Reneke situated on the banks of the Harts River and at the foot of Mamusa hills in the North-West Province. The town of Schweizer-Reneke is the only town in Mamusa Local Municipality `and surrounded by agricultural farms. The municipal area covers the central part of the Southern District municipal area and neighbors the following municipalities: Lekwa-Teemane Local Municipality, Naledi Local Municipality and Greater Taung Local Municipality.

According to census 2011, The Mamusa municipality has a total population of 60 355, this however only contributes only 13% to the total population of the Dr. Ruth S Mompati District Municipality which population totals at 463 815 people. The Global Insight survey 2009 indicated that the population was 48 465 within the Mamusa Local Municipality. The population of MLM is thus increasing and this could be attributed by migration of people from other surrounding local municipalities.

Statistic SA 2011 depicts that the Africans are in majority and constitute about 55195 people of the total population of Mamusa LM. The Whites population group is about 3330 of the total population of Mamusa LM, Coloureds constitute 1356 of the total population of Mamusa LM and the total number of Asians is 290 of the total population of Mamusa LM.

African gender groups dominate the demographic profile of the Mamusa LM. African females are in the majority at 47.4% of the population, followed by African males at 45.6%. White females are dominating at 2.2% compared to the coloureds females at 1.1%. The number of white males is lower at 2.1% and the coloureds males are currently at 0.2%. There is an increase in the Indian/ Asian population at 0.4% overall and this can be attributed to business opportunities within local sector.

According to the Water and Sanitation Backlog study Report of 2007, the total number of households in MLM was 13,676 as compared to 14,968 from the 2001 census and 14,310 as reported by Census 2011 households.

The household structure is measured by the number of households and the average household size. The following describes the household structure. In total, there were 14,625 households in MLM. With a total population of 60355, this gives an average household size of 4.9, about 5 people per household.

The Gross Domestic measures the total number of goods and services produced in a region. The total Gross Domestic Product of MLM in 2009 was R948 461. Gross Domestic Products for Mamusa LM is highly depended on various sectors which include but not limited to Agriculture and hunting, Construction, wholesale, retail, sale and repairs of motor vehicles, restaurants, land and water transport, education, finance, real estates, health and social work and public administration activities. These are some of the sectors highlighted which contribute positively to the growth of Mamusa LM's GDP.

- Cultural and heritage aspects

Special attention will be given to the identification of possible cultural or heritage resources on site.

Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected by the National Heritage Resources Act no 25 of 1999. Therefore if such resources are found during the prospecting or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately and work must stop.

(b) Description of the current land uses.

The site survey revealed that land uses on and in the immediate vicinity of the proposed development are essentially comprised of natural land and to a lesser extent cultivation.

Below is the land cover of the farm which consist of natural land.

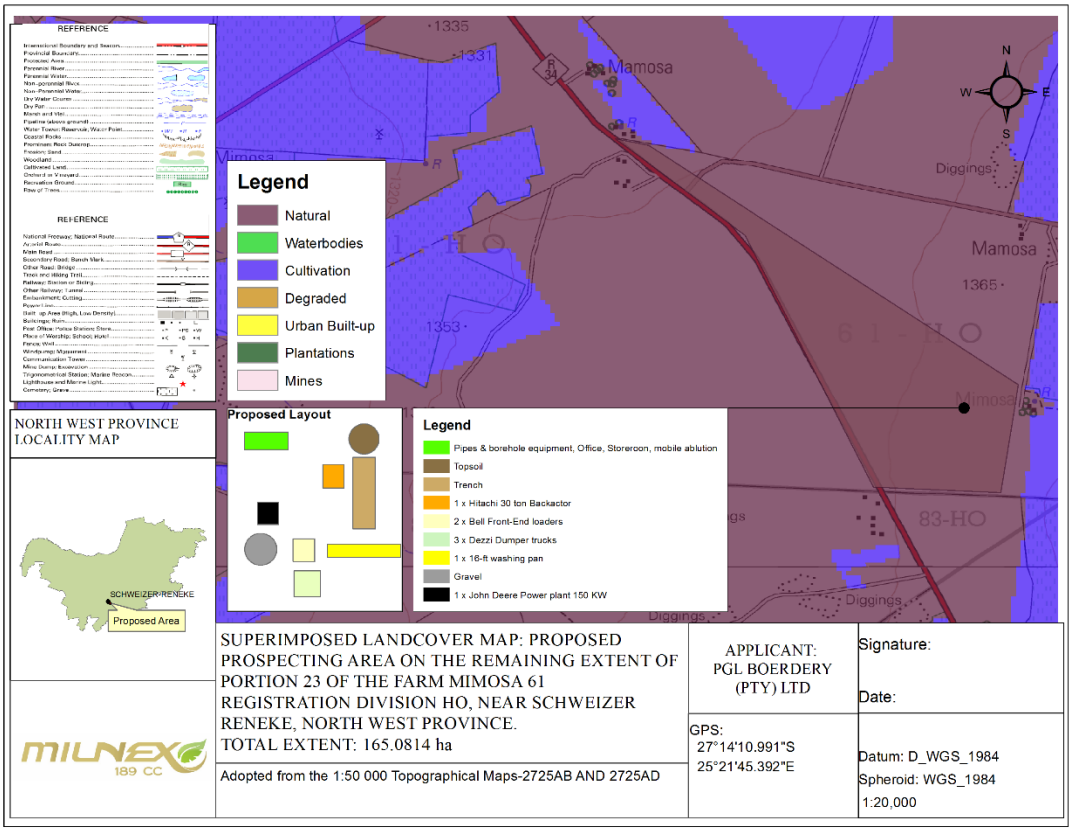


Figure 13: Land cover

(c) Description of specific environmental features and infrastructure on the site.

The infrastructure on site consist of farm roads, house/s, sheds and livestock kraals. The farm consists of natural land. All infrastructure will be temporary and/or mobile.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

A Locality map is attached in **Appendix 3**.

iii. Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts

- Impacts during construction phase:
  - Impacts on the fauna and flora
  - Impacts on the soil
  - Impacts associated with the geology of the site
  - Impacts on existing services infrastructure
  - Impacts on surface water (wetlands/pans)
  - Temporary employment and other economic benefits
  - Impacts on heritage resources
- Impacts during the operational phase:
  - Impacts on the soil
  - Impacts associated with the geology of the site
  - Impacts on surface water (wetlands/pans)
  - Increase in employment and other economic benefits
  - Visual impacts
  - Generation of income to the Local Community
  - Pressure on existing services infrastructure and water sources.
- Impacts during the decommissioning / mine closure phase:
  - Loss of permanent employment & the creation of temporary employment

iv. Methodology used in determining the significance of environmental impacts

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Scoping methodology

The contents and methodology of the scoping report aims to provide, as far as possible, a user-friendly analysis of information to allow for easy interpretation.

- Checklist: The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.
- Matrix: The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts. The matrix also indicates the specialist studies, which will be submitted as part of the Environmental Impact Report in order to address the potentially most significant impacts.

Checklist analysis

The table below provides a checklist, which is designed to stimulate thought regarding possible consequences of specific actions and so assist scoping of key issues. It consists of a list of structured

questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts. The table highlights certain issues, which are further analysed in matrix format.

Table: Environmental checklist

QUESTION	YES	NO	Un-sure	Description
1. Are any of the following located on the site earmarked for the development?				
I. A river, stream, dam or wetland		✕		None
II. A conservation or open space area		✕		None
III. An area that is of cultural importance			✕	
IV. Site of geological significance			✕	
V. Areas of outstanding natural beauty		✕		
VI. Highly productive agricultural land			✕	The proposed area falls within the Class 5 land capability and covered in natural vegetation according to the Land capability map and Landcover map.
VII. Floodplain		✕		
VIII. Indigenous forest			✕	None.
IX. Grass land			✕	None.
X. Bird nesting sites			✕	None.
XI. Red data species			✕	None.
XII. Tourist resort		✕		None.
2. Will the project potentially result in potential?				
I. Removal of people		✕		None.
II. Visual Impacts	✕			The visual impact will be managed.
III. Noise pollution	✕			The noise impact is unlikely to be significant.
IV. Construction of an access road		✕		None. Access will be obtained from the R34 of gravel roads off the R34.
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		✕		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		✕		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	✕			1 x 16 feet washing pan which utilise approximately 17 000 L per hour each from which 30% is re-used.
VIII. Job creation	✕			Approximately 15 employment opportunities will be created during the construction and operational phase of the project.

IX. Traffic generation		✕		None.
X. Soil erosion		✕		Only areas earmarked for prospecting will be cleared. The prospecting will be phased and the topsoil stockpiled separately. Concurrent rehabilitation will take place. The soil also has a low erosion potential.
XI. Installation of additional bulk telecommunication transmission lines or facilities		✕		None.
3. Is the proposed project located near the following?				
I. A river, stream, dam or wetland		✕		None
II. A conservation or open space area		✕		None
III. An area that is of cultural importance			✕	
IV. A site of geological significance			✕	
V. An area of outstanding natural beauty		✕		None
VI. Highly productive agricultural land			✕	
VII. A tourist resort		✕		None
VIII. A formal or informal settlement		✕		None.

5.1 Matrix analysis

The matrix describes the relevant listed activities, the aspects of the development that will apply to the specific listed activity, a description of the environmental issues and potential impacts, and the significance and magnitude of the potential impacts. The matrix also highlights areas of particular concern for more in depth assessment during the EIA process. Each cell is evaluated individually in terms of the nature of the impact, duration and its significance – should no mitigation measures be applied. This is important since many impacts would not be considered insignificant if proper mitigation measures were implemented. The matrix also provides an indication if mitigation measures are available.

In order to conceptualise the different impacts the matrix specify the following:

- **Stressor**: Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.
- **Receptor**: Highlights the recipient and most important components of the environment affected by the stressor.
- **Impacts**: Indicates the net result of the cause-effect between the stressor and receptor.
- **Mitigation**: Impacts need to be mitigated to minimise the effect on the environment.

MATRIX ANALYSIS

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS			SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION
		Receptors		Impact description	Minor	Major	Duration	Possible Mitigation	
CONSTRUCTION PHASE									
Listing Notice GNR 325, Activity 15:"The clearance of an area of 20 hectares or more, of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.		-	L	Yes	-
			Air	• Air pollution due to the increase of traffic of construction vehicles.	-		M	Yes	-
			Soil	• Soil degradation, including erosion. • Loss of topsoil. • Disturbance of soils and existing land use (soil compaction).	-		S	Yes	-
			Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.	-		S	Yes	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the local sewage plant.		-	S	Yes	-
			Ground water	• Pollution due to construction vehicles.	-		S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. • Business opportunities. • Skills development.		+	S	Yes	-
			Visual landscape	• Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility.		-	L	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-
			Health & Safety	• Air/dust pollution. • Road safety. • Increased risk of veld fires.		-	S	Yes	-

			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery such as drills, excavators, rotary pans, dumper trucks and people working on the site.	-		L	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the proposed activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• Removal or destruction of archaeological and/or paleontological sites. • Removal or destruction of buildings, structures, places and equipment of cultural significance. • Removal or destruction of graves, cemeteries and burial grounds.	-		S	Yes	-
Listing Notice GNR 325, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— **4. Listing Notice GNR 325, Activity 20**: "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—	<u>Site clearing and preparation</u> Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately. This will inevitably result in the removal of indigenous vegetation located on the site.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.	-		L	Yes	-
			Air quality	• Air pollution due to the increase of traffic.			M	Yes	-
			Soil	• Soil degradation, including erosion. • Disturbance of soils and existing land use (soil compaction). • Loss of agricultural potential (low significance relative to agricultural potential of the site).			M	Yes	-
			Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the local sewage plant.	-		M	Yes	-
			Ground water	• Pollution due to construction vehicles.			S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).	-		M	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. • Skills development.		+	S	N/A	-
			Visual landscape	• Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility due to dust.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-

			Health & Safety	• Air/dust pollution. • Road safety.		-	S	Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, and people working on the site.	-		M	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the proposed activity will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• Removal or destruction of archaeological and/or paleontological sites. • Removal or destruction of buildings, structures, places and equipment of cultural significance. • Removal or destruction of graves, cemeteries and burial grounds.	N/A	N/A	N/A	N/A	-
OPERATIONAL PHASE									
Listing Notice GNR 984, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)"	The key components of the proposed project are described below: • Supporting Infrastructure - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m² or less. Other supporting infrastructure includes a site office and workshop area. • Roads – Access will be obtained from the R34 or gravel roads off the R34. • Fencing - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Fragmentation of habitats. • Establishment and spread of declared weeds and alien invader plants (operations).		-	L	Yes	-
			Air quality	• Air pollution due to the mining activity, crusher plant and transport of the gravel to the designated areas.	N/A	N/A	N/A	N/A	-
			Soil	• Soil degradation, including erosion. • Disturbance of soils and existing land use (soil compaction). • Loss of agricultural potential (low significance relative to agricultural potential of the site).	-		L	Yes	-
			Geology	• Collapsible soil. • Seepage (shallow water table). • Active soil (high soil heave). • Erodible soil. • The presence of undermined ground. • Instability due to soluble rock. • Steep slopes or areas of unstable natural slopes. • Areas subject to seismic activity. • Areas subject to flooding.		-	S	Yes	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. • Increased consumption of water. Approximately 17 000 L per hour	-		L	Yes	-
			Ground water	• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.	-		L	Yes	-
			Surface water	• Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion. • Destruction of watercourses (pans/dams/streams).		-	L	Yes	-

				• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.					
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. Security guards will be required for 24 hours every day of the week and general laborers will also be required for the cleaning of the panels. • Skills development.		+	L	Yes	-
			Visual landscape	• The proposed portions are used for livestock grazing which will still take place simultaneously with the prospecting activity, however this depends on the location of the activity.		-	L	Yes	-
			Traffic volumes	• Increase in vehicles collecting gravel for distribution.	-		S	Yes	-
			Health & Safety	• Air/dust pollution. • Road safety.			S	Yes	-
			Noise levels	• The proposed development will result in noise pollution during the operational phase.	-	-	L	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• It is not foreseen that the proposed activity will impact on heritage resources or vice versa.	N/A	N/A	N/A	N/A	-
DECOMMISSIONING PHASE									
-	<u>Mine closure</u> During the mine closure the Mine and its associated infrastructure will be dismantled. <u>Rehabilitation of biophysical environment</u> The biophysical environment will be rehabilitated.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.	+		L	Yes	-
			Air quality	• Air pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
			Soil	• Backfilling of all voids • Placing of topsoil on backfill		+	L	Yes	-
			Geology	• It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa.	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at the local landfill site. • Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. • Increase in construction vehicles.	-		S	Yes	-
			Ground water	• Pollution due to construction vehicles.	-		S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Loss of employment.		-	L	Yes	-
			Visual landscape	• Potential visual impact on visual receptors in close proximity to proposed facility.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-

			Health & Safety	• Air/dust pollution. • Road safety. • Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area.	-			Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.	-		S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• It is not foreseen that the decommissioning phase will impact on any heritage resources.	N/A	N/A	N/A	N/A	-

(N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (L) Long Term

v. The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

- Increased ambient noise levels resulting from geophysic surveys site fly-overs and increased traffic movement during all prospecting phases.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.
- Increased vehicle activity with in the area resulting in the possible destruction and disturbance of fauna and flora.
- Poor access control to farms which may impact on cattle movement, breeding and grazing practices.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
- Potential visual impacts caused by prospecting activities.
- Prospecting will be undertaken by specialist sub - contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

vi. The possible mitigation measures that could be applied and the level of risk.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

vii. The outcome of the site selection Matrix. Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

Refer to superimposed map attached as **Appendix 5**.

viii. Motivation where no alternative sites were considered.

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on the Remaining Extent of Portion 23 of the farm Mimosa 61, Registration Division: H0, North West Province, were identified.

ix. Statement motivating the preferred site.

(Provide a statement motivation the final site layout that is proposed)

The site is preferred due to its possibility of having diamond reserves.

(i) Plan of study for the Environmental Impact Assessment process

i. Description of alternatives to be considered including the option of not going ahead with the activity.

The option of not approving the activities will result in a significat loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).

Table: Aspects to be assessed

Aspects / potential impacts	Description of the aspect	Specialist studies / technical information
Biophysical Environment		
Impacts on the fauna and flora	Refer to Matrix table	EAP assessment (using desktop studies, GIS, site visits and the book written by Mucina and Rutherford(The Vegetation of South Africa, Lesotho and Swaziland)
Impacts on the air quality	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on the soil	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts associated with the geology of the site	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on existing services infrastructure	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on ground and surface water	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Socio / Economic Environment		
Impacts on local employment rate	Refer to Matrix table	EAP assessment (using desktop studies, IDP's and SDF's)
Impacts on visual landscape	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Matrix table	EAP assessment (desktop studies, site visits)

iii. Description of aspects to be assessed by specialists

No need for specialist studies are foreseen at this stage.

iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The environmental assessment aims to identify the various possible environmental impacts that could results from the proposed activity. Different impacts need to be evaluated in terms of its significance and in doing so highlight the most critical issues to be addressed.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the table below.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

v. The proposed method of assessing duration significance

Impact Rating System

Impact assessment must take account of the nature, scale and duration of impacts on the environment whether such impacts are positive or negative. Each impact is also assessed according to the project phases:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact the following criteria is used:

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated

		by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		

This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.

51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

vi. The stages at which the competent authority will be consulted

Consultation with the competent and commenting authorities will continue throughout the duration of impact assessment phase. The authorities will also comment on whether they deem it necessary to conduct any specialist studies. On-going consultation will include:

- Submission of the Scoping following a 30 day public review period (and consideration of comments received).
- Submission of the EIR following a 30 day public review period (and consideration of comments received).
- Arrangements will be made to discuss the report with the Environmental Officer responsible for the project during the review period.
- An opportunity to visit and inspect the site.

vii. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

All registered I&APs and relevant State Departments will be given the opportunity to review the Scoping, EIR and EMP in accordance with Regulation R982. A minimum of 30 days commenting period will be allowed and all stakeholders and I&APs will be given an opportunity to forward their written comments within that period. All issues identified during this public review period will be documented and compiled into a Comments and Response Report to be included as part of the Final EIR to be submitted to the North West Department of Mineral Resources.

2. Details of the engagement process to be followed.

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage).

The public participation process will be conducted strictly in accordance with Regulations 39-44. The following three categories of variables will take into account when deciding the required level of public participation:

- The scale of anticipated impacts.
- The sensitivity of the affected environment and the degree of controversy of the project.
- The characteristics of the potentially affected parties.

the following public participation mechanisms will be used:

- Newspaper advertisement in local newspaper
- Site notices
- Direct notification of surrounding land owners and occupiers
- Circulation of scoping report
- Circulation of EIR
- Public participation meeting
- Direct notification to all stakeholders of the Environmental Authorisation given

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land).

The letter provided to I&Aps comprises of a activity, extent and location description, including a locality map of the proposed activity and a Dropbox link to the full Scoping report and Appendices. It also indicates where a hard copy of the report can be viewed or if the need arises for a copy of the report a request can be sent to the relevant EAP who will forward a CD containing all the relevan information.

viii. Description of the tasks that will be undertaken during the environmental impact assessment process

Tasks to be undertaken

The following sections describe the tasks that will be undertaken as part of the EIA process.

- Project Description

Further technical and supporting information will be gathered to provide a more detailed project description. This will include a detailed site layout plan that will be compiled once the low – medium areas of sensitivity have been indicated.

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have at this stage been secured by **PGL Boerdery (Pty) Ltd** near Schweizer-Reneke area to potentially mine alluvial diamonds & diamonds general. Also it is expected that the alluvial diamonds and diamonds general have been deposited on this farm and therefore the applicant would like to commence with their prospecting activities.

- **Activity alternatives**

The scoping process also needs to consider if the development of an alluvial diamond and diamonds general mine would be the most appropriate land use for the particular site.

Mining of other commodities – None

Agriculture – Due to the site being non-arable, the proposed area is used for livestock grazing.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?). In this regard discussions on the design were held between the EAP and the developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing– refer **Appendix 3**.

- **Operational alternatives**

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

The activities will commence with a site investigation and desktop studies, which will comprise of non-invasive techniques. This manner of survey will ensure that the applicant can clearly delineate areas which are suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcome of the desktop studies and site investigation, pits will be dug by an excavator for the purpouse of soil sampling. If gravel is found, the applicant wil determine the the composition and quality of the gravel.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and wash the gravel. It will be washed by 1 X 16 feet washing pan to determine diamond proceeds per 100 tons of gravel.

All data will be consolidated and processed to determine the diamond bearing resources on the property. This will be a continuous process throughout the prospecting work programme.

No feasible alternatives to the pitting and trenching method currently exists. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

- **No-go alternative**

This alternative considers the option of 'do nothing' and maintaining the status quo. The description provided in section H of this report could be considered the baseline conditions (status quo) to persist should the no-go alternative be preferred. The site is currently zoned for agricultural land uses. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for low density livestock grazing.

- **Compilation of Environmental Impact Report**

An EIR will be compiled to meet the content requirements as per Appendix 3 of GNR982 of the EIA Regulations (4 December 2014) and will also include a draft Environmental Management Programme containing the aspects contemplated in Appendix 4 of GNR982.

(ix) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

ACTIVITY whether listed or not listed. **(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation..**	**POTENTIAL FOR RESIDUAL RISK**
Impacts on the fauna and flora	Surface disturbance	Monitor through rehabilitation	High
Impacts on the air quality	dust	Dust Control	Low
Impacts on the soil	Erosion	Storm water control	Medium
Impacts associated with the geology of the site	Fly rock	Blasting controls	Low
Impacts on ground and surface water	Ground and surface water contamination	Storm water control, avoidance	Medium
Impacts on visual landscape	dust	Dust control measures	Low
Impacts on traffic volumes	dust	Dust control measures	Low

J. AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP

I, **Lizanne Esterhuizen** (EAP) herewith confirms

A. the correctness of the information provided in the reports ☒

B. the inclusion of comments and inputs from stakeholders and I&APs ; ☒

C. the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and

D. the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; ☒

Signature of the environmental assessment practitioner:

Milnex 189 CC – Environmental Consultants

Name of company:

12 – 10 - 2017

Date:

K. UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, **Lizanne Esterhuizen,** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP
DATE: 12 - 10 - 2017

L. OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The prospecting will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment in the North West Province.

2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(*i*)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

Special attention will be given to the identification of possible cultural or heritage resources on site. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately and work will stop.

m) Other matters required in terms of sections 24(4)(a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4)**.

From a local the Remaining Extent of Portion 23 of the farm Mimosa 61, Registration Division: H0, North West Province, is preferred due to the sites mineral resources. The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

-END-