mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMMME FOR MAZELSFONTEIN KATLANI COMMUNAL PROPERTY ASSOCIATION

PROSPECTING RIGHT APPLICATION OF DIAMOND, DIAMOND ALLUVIAL, DIAMOND GENERAL AND DIAMOND IN KIMBERLITE ON KATLANI 236, REGISTRATION DIVISION HERBERT, NORTHERN CAPE PROVINCE, SOUTH AFRICA.

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: Mazelsfontein Katlani Communal Property Association

TEL NO: 063 859 6616

FAX NO: N/A

POSTAL ADDRESS: MAZELSFONTEIN/KATLANI, P.O. BOX 456, DOUGLAS, 8730

PHYSICAL ADDRESS: MAZELSFONTEIN/KATLANI, DOUGLAS, 8730

FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/12343 PR

Author : Zandile Dwane (M. Sc in Geology)

Co-author : Kwindla H Nobaza (M. Sc in Chemistry)

FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/12343 PR

1. 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 a 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.

2. Objective of the Scoping process

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

(a) Identify the relevant policies and legislation 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 proffered activity and technology alternative through and 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 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 address 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, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and

(g) Identify, through a ranking of the site sensitivities and possible impacts, the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—

  (i) identify and motivate a preferred site, activity and technology alternative;
  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
  (iii) identify residual risks that need to be managed and monitored.

PART A

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Zandile Dwane

Tel No.: 063 859 6616

Fax No. :

e-mail address: kamvisto@gmail.com

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(with evidence).

M. Sc in Geology
South African Council for Natural Scientific Professionals
American Association of Petroleum Geologists
Attach evidence as Appendix A

(2) **Summary of the EAP's past experience**.
(In carrying out the Environmental Impact Assessment Procedure)

Relevant past experiences include, but not limited, to the following: Environmental Impact Assessments, Environmental Management Plans and / or Reports, Rehabilitation progress assessments, Environmental compliance monitoring, Scoping Reports, etc.

See CV herewith attached
Attach evidence as Appendix A

b) Location of the overall Activity.

Table 1: Description of property

Farm Name:	Farm Katlani 236, within the Administrative District of Herbert
Application area (Ha)	Approximately 4 000 Ha
Magisterial district:	Kimberley
Distance and direction from nearest town	The area of interest is situated approximately 12 to 17 Km South of town of Douglas.
21 digit Surveyor General Code for each farm portion	C03200000000023600000

c) Locality map

(show nearest town, scale not smaller than 1:250000

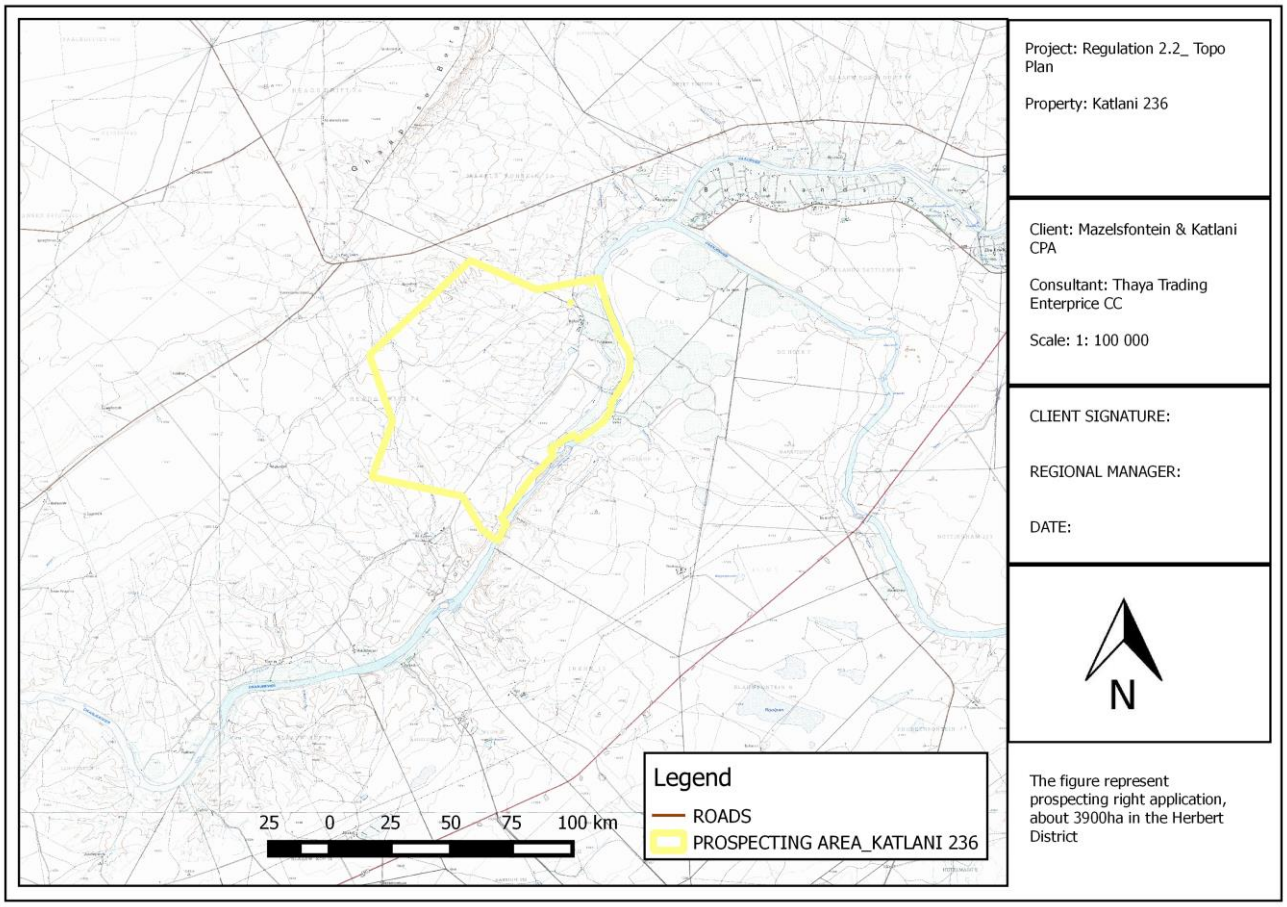


Figure 1: Locality Map Herbert Municipality

d) Description of the scope of the proposed overall activity.

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

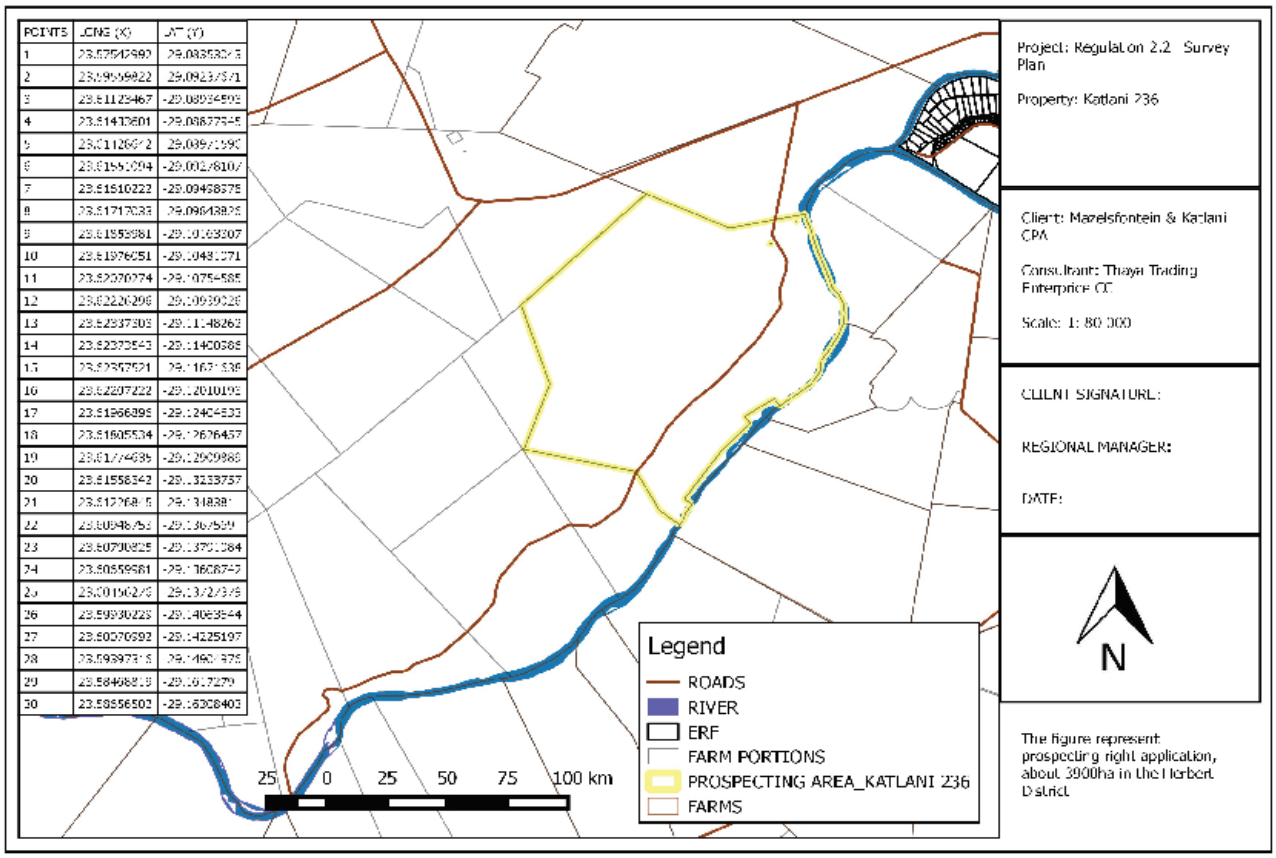


Figure 2a: Map shows the location, and area (hectares) of all the aforesaid main and listed activities

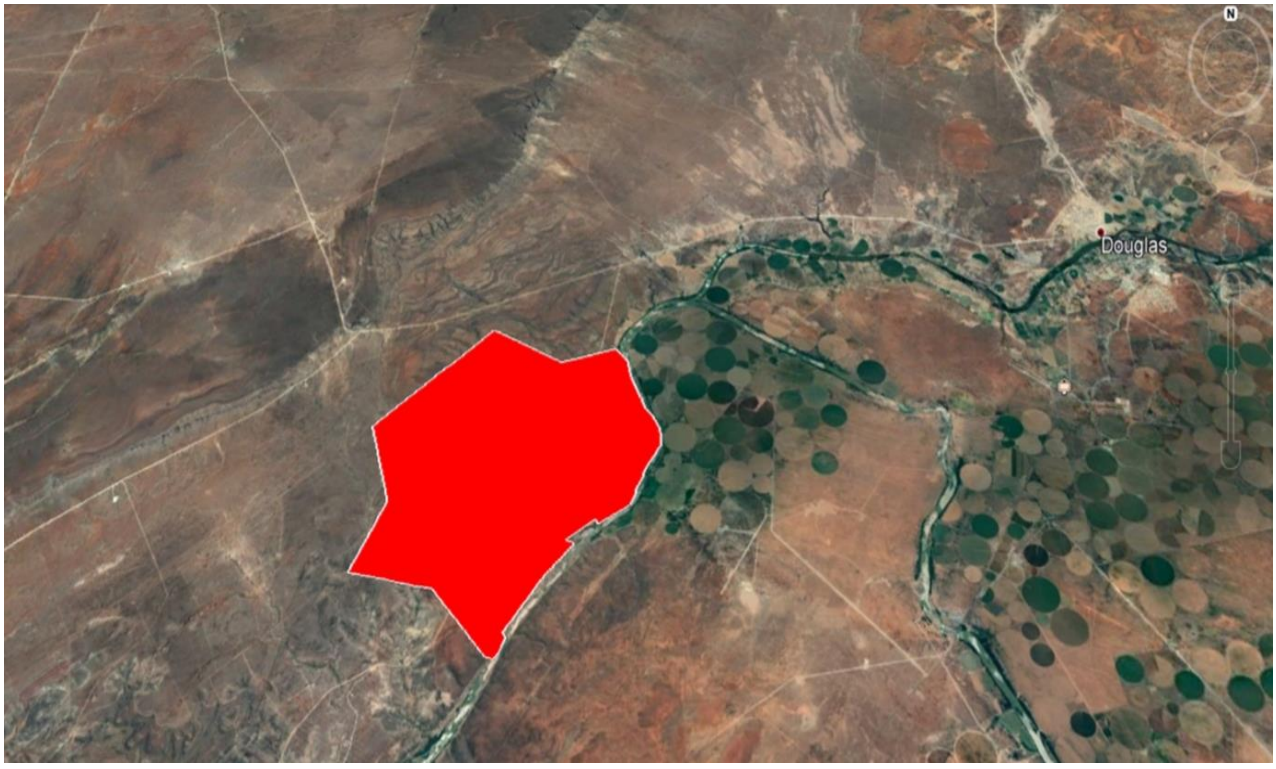


Figure 2b: Map shows the location and infrastructure

(i) Listed and specified activities

Table 2

NAME OF ACTIVITY **E.g. for mining**,- 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)***
This includes any activity, together with the operations 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 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 28 of 2002) Activity 20 of Listing Notice 1	4 000 Ha	X	GNR 325
The extraction, removal and disposal of minerals that is envisaged in terms of Section 20 of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) ("Act"), including affected infrastructure, structures and earthworks, directly related to prospecting of a mineral resource and activities for which an exemption has been issued in terms of Section 106 of the Act. Activity 19 of Listing Notice 2	900 Ha	X	GNR 325 Listing Activity 19
All activities, including the operation of a particular activity associated with primary processing of a mineral resource such as extraction, classifying, reduction, concentrating, winning, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case Activity 6 of this Notice applies. Activity 21 of Listing Notice 2	0.96 Ha	X	GNR 325 Listing Activity 21
Clearance of indigenous vegetation	900 Ha - Only the	X	GNR. 325,

	area where prospecting activities are going to take place will be cleared of indigenous vegetation. Concurrent rehalibilation will be conducted with normal backfilling.		Listing Activity 15
Temporary structures (3 x Park Homes)	0.215 ha		GNR 325, Listed 1, Activity 21
Temporary Dump Site	0.19 ha		GNR 325, Listed 1, Activity 21
Residue Dam	0.5 ha		GNR 325, Listed 1, Activity 21
Concrete spillage control at diesel bousers	100 m^2		Not listed
Oil storage facility	100 m^2		GNR 325, Listed 1, Activity 21
Water pipeline of undetermined length but less than 10 Km	3 Km		GNR 325, Listed 1, Activity 21
Roads to trenches and processing plant	+- 3 Km		GNR 325, Listed 1, Activity 21
Stockpiling of topsoil	900 ha – 3m X 2m X 50m pit (100 pits) 50m X 25m X 7m trench (10 trenches)		GNR 325, Listed 1, Activity 21
Domestic Waste Facility	0.0008 ha	X	GNR 325, Listed 1, Activity 21

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

1) 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

Imagery Analysis and Geological Mapping

High resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and specific attention will be given to delineate and define areas underlain by alluvial gravels or Kimberlites.

A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

2) Description of Planned Invasive Activities

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

Phase 2

Trenches Sampling

Discussed herein after, Section 3.

3) Description of Pre-feasibility Studies

(Activities in this section include, but are not limited to, the following: initial, geological modelling, resource determination, possible future funding models, etc.)

Phase 3

Analytical Desktop Study

The project Geologist monitors the programme, consolidates and processes the data and amends the programme depending on the results. This is a continuous process throughout the programme and continues even when no prospecting is done on the ground.

Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work programme is to proceed in terms of activity, quantity, resources, expenditure and duration.

A GIS based database will be constructed to capture all exploration data.

4) Description of Bulk Sampling Activities

Bulk sampling is the sampling technique to be employed in this project.

Volumes of the mineral to be tested

About 10 Trenches will be excavated with the following dimensions that may prove to contain alluvial gravels or kimberlitic material. It is estimated that an average 3m of overburden (calcrete and soil) will be removed before accessing the gravel layer (average width 2 – 4m) which is the normal host to the diamonds. The trenches will be 50m x 25m x 7m deep. We calculated the volume of gravel on 4m and if all 10 trenches are going to be excavated an average of 50 000m³ will be tested.

Why will they be tested?

The gravel will be tested to determine a grade (carats per hundred tonne) and value (US$ per carat). The closest alluvial operation is next to these farms on all sides of the river.

Where will they be tested?

All bulk sampling activities will take place on site or out of site. Herewith follows a description of the process:-

The planned bulk sampling technique is that of a typical South African alluvial diamond operation and may have to include mining of kimberlite if such pipes are present within the application area. The planned prospecting method is a strip mining process with oversize material from the gravel scalping and the tailings from the plant, being used as a backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the nearby treatment facility using articulated dump trucks. The access to the various gravel trenches will be provided by a haul road to the screening and processing plants. The operation is to be conducted using conventional open pit mining equipment comprising two articulated dump trucks supported by appropriate excavators and a front-end loader. The vegetated soil overlying the planned trenches is stripped prior to excavation of the gravel and stockpiled on a dedicated dump to be used for rehabilitation purposes at a later stage. The gravel is loaded with an excavator onto ADT Dump Trucks. Ore is hauled to the screening plant. As an integral part of the bulk sampling processes, backfilling will take place continuously. The operation is to be conducted using conventional open pit mining, however, if necessary, underground mining may become the method of choice using some of the following pieces of equipment or machinery:

Earthmoving and ancillary equipment

1 x Excavator

2 x Front-end Loader

2 x Articulated Dump Trucks

1 x Sorting Plant

1 x Water Truck

1 x 16ft-Rotary Pan (max.)

Screen

Utility vehicles and small tools

Diamond recovery unit with Flow sort Machines, Plant, and recovery, crushing and screening equipment

Gravels are loaded onto a vibrating grizzly and the +85mm oversize material is discarded back into the open pit (about 25% reduction). The remaining -85mm fraction is loaded into a 16-foot rotary pan with a treatment capacity of 80 tph. A magnetic separator is used to extract some of the heavy banded iron stones. Tracer tests are done regularly to ensure that the pans are operating at the correct density. Approximately 2.5 tonne of concentrate is tapped from the pan every hour and transported in locked containers to the final recovery unit. The final recovery unit consists of a holding bin, sizing screen, sizing bins and one state of the art Flowsort X-ray recovery unit which recover diamonds from the +2mm to -32mm size fraction. Final sorting of the X-ray concentrate will be done manually. Rehabilitation will take place continuously and at any stage only one trench will be open.

If kimberlite is found to be present in any of the farms of interest as expected, the application to the DMR will be dealt with accordingly.

To whom they will be disposed of:

An expected grade of 1.5 carats per hundred tonnes, 8 800 carats could be recovered from the gravels. Diamonds will be sold at a reputable diamond tender house in Kimberley among others to determine an average US$ carat value for the diamonds. Alternatively, the stones will be sold to international markets that affiliate to the Kimberley process.

Rehabilitation

Rehabilitation will be carried out as far as possible, however it should be noted that the site will not be able to be completely backfilled as operations are going to be open cast prospecting due to the removal of sand (if any), stone aggregate among others.

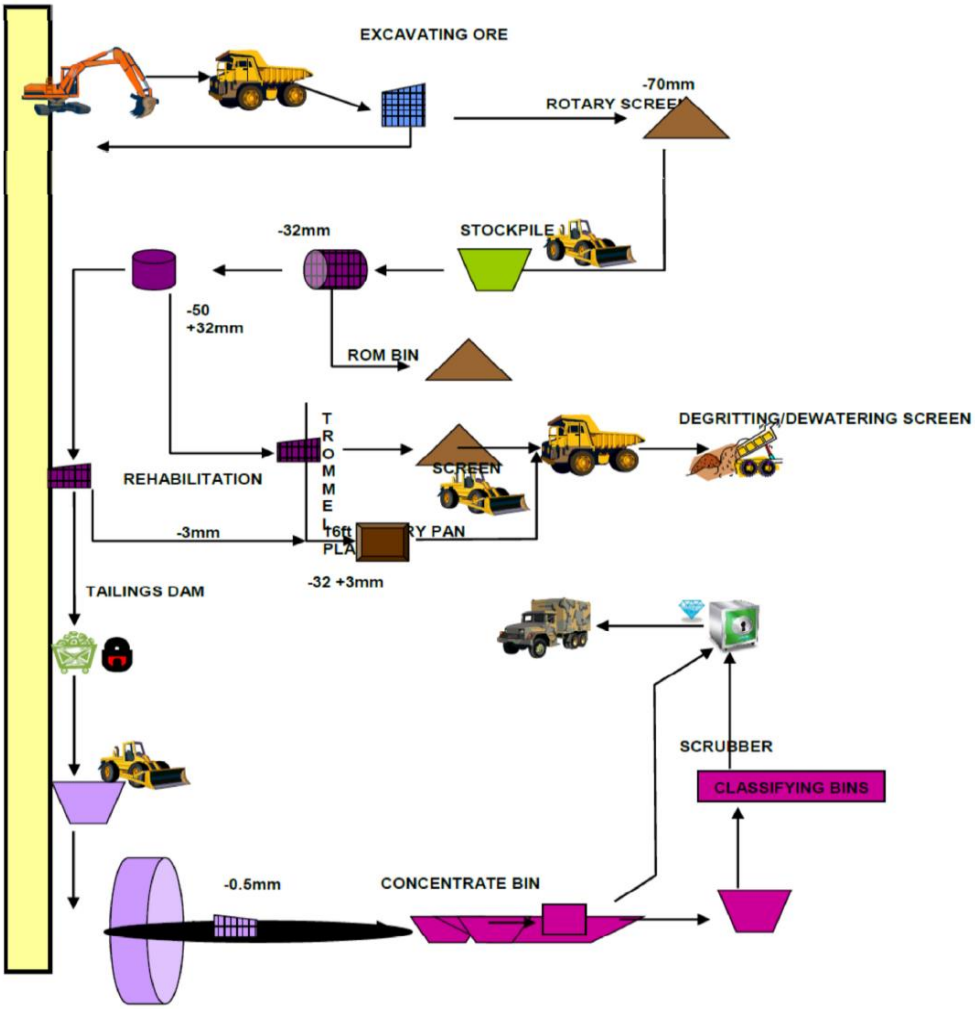


Figure 3: Schematic representation of the planned process flow

5) Construction Phase

- Preparing the area to cater for a campsite to accommodate personnel and infrastructure relevant to the planned mining, crushing, recovering activities, among others.
- Site clearance (where necessary) and removal of rubble.
- Construction of pollution control facilities, if necessary.
- Construction of storm water management facility in order to limit the amount of water that enters the pits.
- Establish Waste Management Facilities, if necessary.

6) Operational Phase

- Excavation, Crushing, Screening, Sorting, Load and Haul of material
- Operation of equipment and machinery
- Use of Water and Hydrocarbons
- Use of pollution control and waste management equipment and machinery.
- Maintenance of equipment and machinery

- Backfilling, Closure and Rehabilitation

7) Decommissioning Phase

Mobile equipment is going to be used in these operations. When mobile infrastructure is used, the decommissioning phase is going to be straight forward as the infrastructure would be transported away from site. It is worth mentioning that the schedule of rehabilitation is going to be phased to run in parallel with the mining and crushing activities to ensure 'pain-free' rehabilitation ultimately. Removed and relocated species are going to be planted again or returned to their habitat.

Table 3: Bulk Sampling Activities

ACTIVITY		DETAILS
Number of pits/trenches planned		10 trenches
	Number of pits/trenches	**Length Breath Depth**
	10	50m 25m 7m
		18 750 m^2 = 1.875 ha that will be disturbed with trenches (0.7% of the property will be tested and disturbed)
Locality		See figure 1
Volume Overburden (Waste)		25 000 m^3
Volume Ore		50 000 cm^3 (estimated 4m gravel)
Density Overburden		1.2 $g.cm^{-3}$
Density Ore		1.2 $g.cm^{-3}$
Phase when bulk sampling will be required		Phase 3
Timeframe(s)		From time-to-time during months 7 to 36

e) Policy and Legislative Context

Table 4: 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**	**HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	Prospecting Right application process	Prospecting Rights have been applied for and have been accepted by the Department of Mineral and Energy.
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	Prospecting Right and Environmental Authorisation processes	In progress
National Environmental Management Act, 1998 (Act 107 of 1998)	Section 28 of the National Environmental Management Act, Act 107 of 1998 stipulates an obligation of consideration of care where reasonable measures are taken to prevent pollution or degradation from occurring, continuing or recurring, or, where this is not possible, to minimise and rectify pollution or degradation of the environment. Section 29 provides for the protection of workers who refuse to undertake work that posses a hazard to the environment. Section 30 emphasises on procedures to be followed in the event of an emergency, especially an incident which may impact negatively on the	In progress

	environment. Section 31 covers the aspect of access to environmental information and protection of whistle blowers.	
National Environmental Management Act, 1998 (Act 107 of 1998) Environmental Impact Assessment Regulations, 2017 (G40772)	GNR 325: 2017 Regulations promulgated in terms of NEMA, Act 107 of 1998: GNR 324, 325, 326 and 327 Government Gazette No. 40772, Pretoria, in terms of Chapter 5 of the National Environmental Management Act, Act 107 of 1998 (as amended), contain the EIA Regulations, as well as a schedule of activities that may have substantially negative effects on the environment, therefore, require authorisation from the competent environmental authority.	In progress
National Environmental Management Act: Biodiversity Act, 2004 (Act 10 of 2004)	The National Environmental Management: Biodiversity Act, Act 10 of 2004 provides for the MEC/ Minister to list ecosystems that are threatened and in need of protection (Section 52) and to identify any process or activity in such a listed ecosystem as a threatening process (Section 53). A list of threatened and protected species has been published in terms of Section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulations. The Act also deals with restricted activities involving alien species; restricted activities involving certain alien species totally prohibited; and duty care to be taken pertaining to listed invasive species.	
National Environmental Management Act: Waste Act, 2008 (Act 59 of 2008)	Regulates waste management in order to protect health and the environment by stipulating reasonable measures to be taken to ensure prevention of pollution and ecological degradation, and for securing ecologically-sustainable-development.	In Progress
National Water Act, 1998 (Act 36 of 1998)	In terms of the definitions contained in Section 1 of the National Water Act, Act 36 of 1998, a “water resource” includes a watercourse, surface water, estuary, or aquifer. “Aquifer” means a geological formation which has structures or textures that hold water or permit appreciable water movement through them. “Watercourse” means a	In progress

	river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may, by notice in the Gazette declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks. In addition, in terms of the definitions contained in Section 1 of the National Water Act, waste "includes any solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water course in such volume, composition or manner as to cause, or to be reasonably likely to cause, thewater resource to be polluted". The Minister of Water and Sanitation and that of Environmental Affairs are allowed to regulate activities which have a detrimental impact on water resources by declaring them to be controlled activities. No person may undertake a controlled activity unless such person is authorised to do so by or under the Act. Duty of Care to prevent and remedy the effects of pollution to water resources is addressed in Section 19. Section 20 addresses the procedures to be followed, as well as control of emergency incidents which may impact on a water resource. Recognised water uses are addressed in terms of Section 21 and the requirements for registration of water uses are stipulated in Section 26 and Section 34.	
World Heritages Convention Act, 1999 (Act 49 of 1999)		
Environmental Conservation Act, 1989 (Act 73 of 1989)	Section 25 of the Environment Conservation Act, Act No. 73 of 1989, as well as the National Noise Control Regulations GNR 154 dated 10 January 1992, regarding noise, vibration and shock, is applicable.	
Environmental Conservation Amendment		

Act, 2003 (Act 50 of 2003) G26023		
National Environmental Management Act: Protected Areas Act, 2003 (Act 57 of 2003)		
In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In terms of the National Heritage Resources Act, Act No. 25 of 1999, any person who intends to undertake "any development or other activity which change the character of a site – exceeding 5 000m² in extent" and "the construction of a …. Linear development or barrier exceeding 300m in length" must at the very earliest stages of initiating the development notify the responsible heritage resources authority, viz. the Northern Cape Provincial Heritage Resources Agency (NCPHRA) and/or the South African Heritage Resources Agency (SAHRA), as well as the Northern Cape Department of Sports, Arts and Culture.	
Conservation of Agricultural Resources Act, Act No 43 of 1983	Section 5 of the Conservation of Agricultural Resources Act, Act No. 43 of 1983, prohibits the spreading of weeds and Section 6 and Regulation 15 and 15E of GNR 1048 address the implementation of control measures for alien and invasive plant species. This aspect has been addressed in the Environmental Management Programme. This Act also make provision for the conservation of agricultural land.	
National Forests Act, 1998 (Act No. 84 of 1998)	National Forests Act, Act No. 84 of 1998 and Regulations, Section 7: No person may cut, disturb, damage or destroy any indigenous, living tree in a natural forest, except in terms of a licence issued under Section 7(4) or Section 23; or an exemption from the provisions of this subsection published by the Minister in the Gazette. Sections 12 – 16 deal with protected trees, with the Minister having the power to declare a particular tree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodland or species. In terms of	

	Section 15, no person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.	
Subdivision of Agricultural Land Act, Act 70 of 1970	Control the subdivision, and in connection therewith, the use of agricultural land. It also controls long terms leases over portions of agricultural land. The applicant needs to apply for consent from Department of Agriculture for these leases.	
Section 17 of the Fencing Act, Act No 31 of 1963	States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5m on each side therefore and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora.	
Section 8 of the Atmospheric Pollution Prevention Act, Act No. 45 of 1965	Section 8 of the atmospheric Pollution Prevention Act, Act No. 45 of 1965, regulating controlled areas, as well as Section 27, with regard to dust control, is still applicable.	
The Occupational Health and Safety Act, Act No. 85 of 1993 GN R 2281 of 1987 – 10-16.	Environmental Regulations for Workplaces are applicable.	
The Northern Cape Nature Conservation Act, Act No. 9 of 2009 addresses protected species in the Northern Cape and the permit application processes related thereto.	Addresses protected species in the Northern Cape and the permit application processes related thereto.	
The South African Civil Aviation Regulation Act, Act 13 of 2009.	Controls markings of structures that may influence aviation through the Civil Aviation Technical Standard, SA-CATSAH 139.01.33 Obstacle Limitations and Markings outside Aerodrome or Heliports. It states that any structure exceeding 45m above ground level, or structures where the top of the structure	

	exceeds 150m above the MEAN ground level, like on top of a hill, the mean ground level considered to be the lowest point in a 3km radius around such structure. Structures lower than 45m, which are considered as a danger or a potential danger to aviation, shall be marked as such when specified. Overhead wires, cables, etc., crossing a river, valley or major roads shall be marked and in addition, their supporting towers marked and lighted if an aeronautical study indicates that is could constitute a hazard to aircraft. The highest structures that would be constructed at the proposed development would be the lighting conductors, which would have a height of 25m.	

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).

For years, mining has been the driving force behind South Africa's economy and continues to make a valuable contribution to the country's GDP. The economy of South Africa is built mostly on gold and diamond-mining, with gold-mining contributing over a third of the country's exports. Whereas, South African diamond-mining industry was listed as one of the largest mining countries in the world in the year 2009. It is predicted that mining will still play an important role to the economy, most notably through foreign exchange earnings and employment provision. It is also one of the primary sectors that provide employment opportunities for unskilled and semi-skilled people. The South African mining industry has its origin in small-scale to medium-scale mining activities, with these operations offering much needed employment opportunities and entrepreneurship, as well as contributing to the mineral sector and local economy. Small-scale mining and medium-scale mining's impact on employment is especially observed in the rural areas and province such as the Northern Cape where there are limited opportunities; providing significant livelihood for rural communities and a means of alleviating poverty.

The proposed development of the Mine is aimed at supporting the economy of South Africa by producing a commodity that has a potential to leverage the economy of the country. The primary beneficiaries of this project include, among others, the employees, members of surrounding communities and the country. Secondary beneficiaries include the suppliers of goods and services, and the local businesses through the buying power of employees.This is in line with the National Development Plan (NDP). The Social Labour Plan of the Proposed development is aimed at ensuring local economic development through implementation of the various projects.

The applicant estimates that these small pieces of land could, if prospecting rights are granted, prove to be bearing commodities of high economic value. Only small portions of the farms that are targeted will be temporarily disturbed. The remainder of the farm portions will proceed as normal.

g) Period for which the environmental authorisation is required.

The environmental authorisation is required for a minimum period of 10 years.

h) Full description of the process followed to reach the proposed preferred site.

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

Each of the phases is dependent on the results of the preceding phase. Each of the phases is 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. In an event there are Kimberlite pipes in any of the farms of interest; mining operations will be conducted accordingly.

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.

The EIA process identifies, among others, critical components of alternatives to be considered whilst ensuring that the desired outcome pertaining the proposed project is realised. In the process of identifying and assessing the feasible options, factors such as the National Development Plan and sustainable development to mention just a few are considered. The assessment process may include the environmental friendliness, economic viability and reasonable practicability. As a consequence, alternatives for the locality of the prospecting activities are not discussed in this piece of work because the position and location of the mine are influenced to an unlimited extent by the availability of the commodity at a particular location. Additionally, no other location or properties have been applied for by the applicant, Mazelsfontein Katlani Communal Property Association.

Land use

There is no specialist comparative study in place for the proposed prospecting work area. The process that is going to be employed from beginning to end of prospecting woks is going to be step-wise; the initial step is going to be to establish whether or not there commodities of economic value that could be mined in the area of interest before any development can take place. Some parts of the farms of interest have been mined for diamonds previously; as such there is existing infrastructure on them. It would be convenient, environmentally friendly and economically viable to utilise the existing infrastructure. If need arises, during prospecting phase, the infrastructure used will be mobile only.

The rehabilitation process and the prospecting phase are going to be conducted simultaneously in order to ensure that the pits that get opened during the prospecting phase are backfilled. All the material taken out of the pits that does not bare the commodity of interest will be deposited back into the pits. The rehabilitation process will be performed with the aim to enable normal agricultural activities to be undertaken after the mining has been deemed economically not viable.

Consultation of I&APs

Results obtained from the consultation process followed are going to be discussed later in this report.

Prospecting Method

To the best of our knowledge, the most economically viable method to be applied in open pit mining operations is 'backfilling'. The method of backfilling is going to be used in this proposed development as well.

Proceed without the Mine (no go)

Biodiversity and Ecology

The proposed development is going to have an impact on biodiversity because some indigenous vegetation is going to be removed. Additionally, there is going to be some destruction of habitats. However, none of this destruction would have been possible if this proposed development was not going to go on.

Six plant communities were identified on site of which the riparian woodland, ephemeral drainage ways, disturbed watercourse and ephemeral pan are considered to be of very high sensitivity. The thornveld on Ventersdorp lava and open shrubland on calcrete ridges are considered to be of high sensitivity, while the area transformed for agriculture is considered to be of low sensitivity. The most profound impacts are expected to be related to the loss of plant species of conservation concern as well as the disruption of ecological corridors and the hydrological regime if any of the tributaries to the Orange River are cut off, or if the ephemeral pan is destroyed through excavations.

Species of conservation concern that are found in the prospecting area include *Hoodia gordonii, Aloe claviflora, A. hereroensis, Gymnosporia buxifolia, Olea europaea* subsp. *africana, Boscia albitrunca, Ruschia griquensis, Jamesbrittenia tysonii, Ornithogalum flexuosum* and *Pachypodium succulentum.* Similarly, the prospecting operation will result in the large-scale clearance of indigenous vegetation. Permit applications regarding protected flora as well as the harvesting of indigenous vegetation need to be lodged with the Northern Cape Department of Environment and Nature Conservation three months prior to any clearance of vegetation.

Similarly, if any of the *Boscia albitrunca* trees are to be affected, a licence application regarding protected trees should be lodged with Department of Agriculture, Forestry and Fisheries three months prior to any potential disturbances to these trees.

It is clear that the destruction of the natural habitat within the study area is inevitable. The significance of the impacts will be affected by the success of the mitigation measures implemented and the rehabilitation programme for the prospecting area. In the Ecologist's opinion, authorisation can be granted if the applicant commits to the adherence of effective avoidance, management, mitigation and rehabilitation measures.

Heritage and Cultural Resources

The existing heritage resources, if any, are going to be protected through demarcation of the NO-GO zone(s). All encountered graves, if any, are going to be preserved. Buffer zones may be built, at least 100 m away from the preserved heritage resource. Specialists and relevant authorities will be notified and called in should any Heritage Resources of significant importance be encountered. Alternatively, a procedure/protocol that is recommended by specialists may have to be followed. The property owners were urged to protect the site KAT13 and KAT14 (please see Annexure D). Declaration of the sites to Grade II (Provincial) status may contribute to strengthening protection measures. The proposed Chance Find Protocol is going to be followed should any fossils be encountered at any phase of this development.

Hydrology

The proposed Katlani Diamond Mine Prospecting Area is located in the Orange River basin, quaternary catchment D71A. The prospecting area is situated directly on the bank of the Orange River. The quaternary catchment D71A has a net mean annual runoff (MAR) of 0.9 million cubic meters (mcm), and is based on the WR2005 study.

The slope of a catchment is a very important characteristic in the determination of flood peaks. Steep slopes cause water to run faster and to shorten the critical duration of flood inducing storms, thus leading to the use of higher rainfall intensities in the runoff formulae. On steep slopes the vegetation is generally less dense, soil layers are shallower, and there are fewer depressions, all of which cause water to run off more rapidly. The result is that infiltration is reduced and flood peaks are consequently even higher.

Socio-Economy

The proposed project will, if proven to be economically viable, definitely contribute to the economy of the local communities, and to that of the country at large. On prospecting phase of the proposed development alone, there are some people who are going to benefit as employees of the company.

Mazelsfontein Katlani Communal Property Association is in a position to employ people from all walks of life; however, preference is going to be given to locals. Furthermore, Mazelsfontein Katlani Communal Property Association is committed to Development and Sustainability of the Local Economy and Infrastructure Development.

Technology to be used during Activities

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 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. The CPA has in its possession a 14 feet rotary pan at the moment. However, if it happens, kimberlite deposits are identified on this site, the Dense Media Separation (DMS) plant may become a technique of choice.

Operational Aspect 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 purpose of soil sampling. If gravel is found, the applicant wil determine 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 washing pan to determine diamond proceeds per 100 tons of gravel or kimberlitic ore.

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 exist as far as we are aware. Impacts associated with the prospecting operations will be managed through the

implementation of a management plan, developed as part of the application for authorisation. See Figure 3.

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.

Letters were sent out by registered mail to interested and affected parties (land owners, neighbouring farmers, certain government departments and parastatals). Identified I&APs, including key stakeholders representing various sectors, were directly informed of the proposed development and the availability of the Scoping Report via local Newspaper (DFA).

The consulted parties include the following:

Departments:

Water and Sanitation, SAHRA, Agriculture, Environment and Nature Conservation, Eskom, Transnet, Herbert Municipality, Public Works, Rural Development, Land Commission & SANRAL

A notice was published in English on DFA newspaper and on site for public participation and registration as Interested and Affected Parties (I&APs) to comment. All the I&APs were requested to submit comments and objections to Thaya Trading Enterprise within 30 days of the advertisement.

The process as described by NEMA for Environmental Authorisation was followed. Letters were sent by registered mail to all parties given below. See attachment.

iii) Summary of issues raised by I&APs

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

Table 5: Summary of issues raised by I&As

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 issues and or response were incorporated.**
AFFECTED PARTIES					
Landowner/s	**X**				
Siyancuma Local Municipality	X				
Lawful occupier/s of the land					

Landowners or lawful occupiers on adjacent properties	**X**				
Municipal councillor	**X**				
Municipality	**X**				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Communities					
Dept. Land Affairs	X				
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
SANRAL	X		Dear sir/madam The above listed project bears reference. I would hereby wish to register as an I&AP for this particular project. The South African National Roads Agency SOC Limited (SANRAL) has received background information for your proposed study and want to determine	Dear Madam, I hereby acknowledge receipt of your e-mail. In response, please find herewith attached plan and kml file for your attention. I hope you find this in order. Warmest	

			whether SANRAL could be impacted by this development. May I request that you email me a detailed locality plan on which indicated that nearest national road. If services need to be constructed over or under the national road, within 60m measured from the road reserve fence, the service owner must apply for a written permission from SANRAL, before any work may be carried out. Attached please find an application form for the proposed encroachment. Do not hesitate to contact the sender should you have any further queries. I trust that you will find the above in order. Regards	regards,	
Transnet	X				
OTHER AFFECTED PARTIES					
SAHRA			The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit requests that a Heritage Impact Assessment (HIA) be	Complied	

		submitted to the case for review as part of the EA and PR application. The HIA must have been completed in terms of section 38(3) and 38(8) of National Heritage Resources Act, Act 25 of 1999 (NHRA). The HIA must be inclusive of archaeological and palaeontological components. The quickest process to follow for the archaeological component would be to contract a qualified archaeologist (see www.asapa.co.za or www.aphp.org.za to provide an Archaeological Impact Assessment (AIA). The AIA must comply with the SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Component of Impact Assessments. A desktop Palaeontological Assessment is required as the		

		proposed development footprint is located within an area of moderate and high sensitivity as per the SAHRIS PalaeoSensitivity map. The report must comply with the 2012 Minimum Standards: Palaeontological Component of Heritage Impact Assessments (a list of qualified palaeontologists can be found at https://www.palaeosa.org/heritage-practitioners.html). Any other heritage resources as defined in section 3 of the NHRA that may be impacted, such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed. The draft EIA and all		

		appendices must be submitted to the SAHRIS application at the beginning of the Public Review Period so that an informed comment may be issued. Further comments will be issued upon receipt of the above.		
SAHRA		The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final EIA and EMPr: • 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit and the Burial Grounds and Graves	Complied	

		(BGG) Unit has no objections to the proposed development; • 38(4)b – The recommendations provided by the heritage specialists are supported and must be adhered to. Further specific conditions are provided for the development as follows; • A no-go bufferzone of 30 m must be adhered to around the following sites: structures (KAT12, KAT17 and KAT36), and engraved glacial		

		pavements (KAT13 and KAT14); • The 100 m no-go buffer zone around the graves is supported; • A Heritage Management Plan (HMP) inclusive of a monitoring schedule and reporting procedure must be developed for the in-situ protection and management of heritage resources identified within the development area. This HMP must be		

		developed prior to the commencement of prospecting activities and submitted to SAHRA for comment; • 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found		

		during the proposed development, SAHRA APM Unit (Natasha Higgitt/ Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule; • 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves		

		(BGG) Unit (Thinga hangwi Tshivha se/Mimi Seetelo 012 320 8490), must be alerted immedia tely as per section 36(6) of the NHRA. Non-complia nce with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedul e; • 38(4)d – See section 51(1) of the NHRA; • 38(4)e – The followin g conditio ns apply with regards to the appoint ment of		

		specialists: • i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operatio		

		n may be required subject to permits issued by SAHRA; • The Final EIA and EMPr must be submitted to SAHRA for record purposes; • The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.		
INTERESTED PARTIES				
None				

iv) The Environmental attributes associated with the alternatives.(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment

(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Geology of the Area
Local Geology

The surface geology of the area comprises mainly of Quaternary sediments namely alluvial diamondiferous gravel, sand (red and grey aeolian dune sands), shale and andesite in places amygdaloidal and/porphyritic with quartzite and conglomerate lenses near the bottom.

The application area is located in the Northern Cape Province, 12 - 17 Km South of the town of Douglas in the Kimberley Magisterial District, Northern Cape Province. The surface geology of the area comprises mainly of Quaternary sediments namely alluvial diamondiferous gravel, sand (red and grey aeolian dune sands), shale and andesite in places amygdaloidal and/porphyritic with quartzite and conglomerate lenses near the bottom.

The early Quaternary sediments most likely cover the Karoo Supergroup particularly the Dwyka Group and the Ecca Group. The Dwyka Group is situated on the on glaciated Precambrian bedrock surfaces along the northern basin margin but overlies the Cape Supergroup in the south. This group consists of a selection of lithofacies types. The lithofacies types consist mainly of massive diamictite, stratified diamictite, massive carbonate-rich diamictite, mudrock with stones and mudrock facies. The Ecca Group consists of up to 16 formations. These formations mirror the lateral facies changes that characterize the Ecca Group Formation. The individual formations can be grouped into three geographical areas for descriptive purposes except for the Prince Albert and Whitehill Formation. These formations comprise mainly of sandstone, siltstone, mudrock, limestone and coal seams depending on the geographical areas (Johnson M.R et al., 2006).

Alluvial diamonds have been extracted from several areas within the Vaal and Orange River systems amongst others. These deposits are formed mostly on Ventersdorp Supergroup lava bedrock. The alluvial diamond deposits occur where the Vaal, Orange and Riet Rivers flow off the younger Karoo cover onto the hard basement.

It is evident that all “calcrete caps” as well as the different fluvial terrace deposits are covered by gravel known as the “Rooikoppie” gravels. The Rooikoppie gravels characterize mobile, multi-cyclic deflation and gravitational deposits where surface scree deposits and/ high fluvial deposits. These deposits are preserved and recycled repeatedly from one land to the next (Gresse, P.G., 2003).

Due to the recycling process of material only the most resistant material such as quarts and chert will endure. For this reason diamonds will only be present where the Rooikoppie gravels recycled older diamondiferous fluvial deposits. Unproductive fluvial deposits may overlie diamondiferous Rooikoppie gravels or the other way around. Figure 4 shows geological features of the area of application.

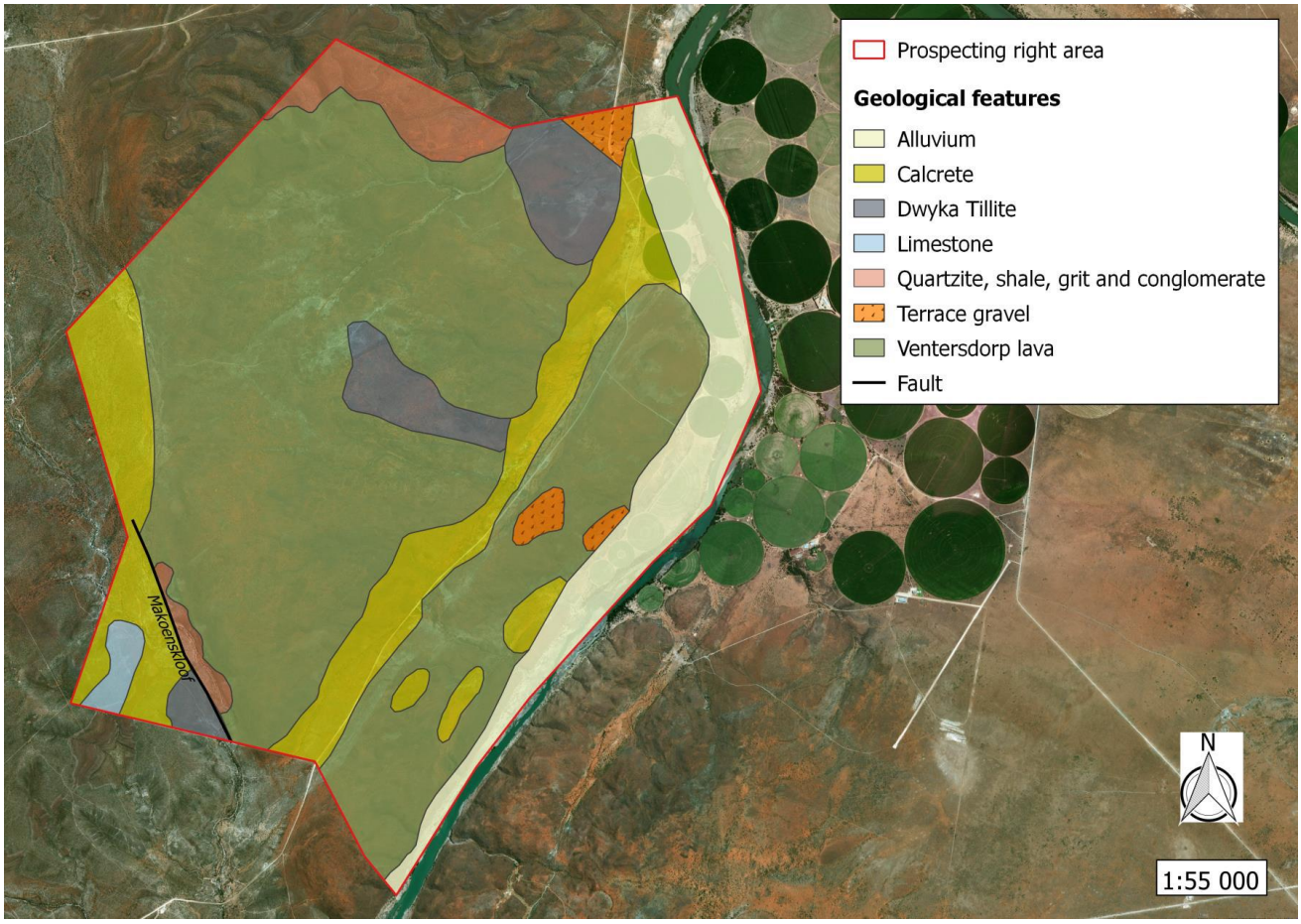


Figure 4: The distribution of geological features in the study area.

Land Use

The land use and land cover of the area can be classified into three classes. These are: grazing land, **forest** and **bushveld** land. Most of the area is bare land, with thin soil layer between fractures and also covered by thin vegetation which was used for grazing by the farmers. Currently, major land uses in the region include activities related to mining and agriculture. The land capability for the study site is non-arable with low potential grazing land. The agricultural region is demarcated for cattle farming, with the grazing capacity estimated at 24 Ha/LSU. However, extensive crop irrigation, i.e. cotton, lucerne, table grapes and sultanas occur on the deeper alluvial soils along the Orange River (Rumboll 2014).

Apart from the current prospecting right application, a portion in the southern half of the farm was also subject to small-scale diamond mining in the past. Currently, the farm is utilised as natural pastures for cattle, sheep, goats and a few horses, as well as for barley-maize rotational pivot irrigation in the east, along the river.

Soil Type

The Orange Vaal Rivers in the area meanders through various geological structures which give rise to a variety of soil types and textures. Based on the soil textural classification method, the soil that is found in the study area is grouped into different soil classes. **Namely: sandy loam, clayey sand and sandy clay loam**. Loam is a soil composed of a relatively even a mixture of three mineral particle size groups: sand, silt and clay. Loams are plastic when moist, and retain water easily. The proportions of sand sized particles are also prominent in sandy clay loam and sandy loam soil types. Sand loam, clayey sand and sandy clay loam have 12.5%, 8.3%, 7.7% aerial coverage, respectively.

The terrain is indicated by a very gentle slope of <2 % on the plains, but increases slightly from 3 – 8 % on the ridges to 9 – 12 % on the hills. Land types found on the property include Ia124, Fc5 and Fc7 (Figure). The alluvial soils along the Orange River are described as undifferentiated deep deposits. Soils associated with the Fc5 and Fc7 land types are usually Glenrosa and/or Mispah forms with lime generally present in the entire landscape.

The soils of the study area have a low to moderate water and wind erosion risk. However, if badly eroded the soils have a low to very low potential to regenerate. Figure 5 shows land-type distribution on the area of application.

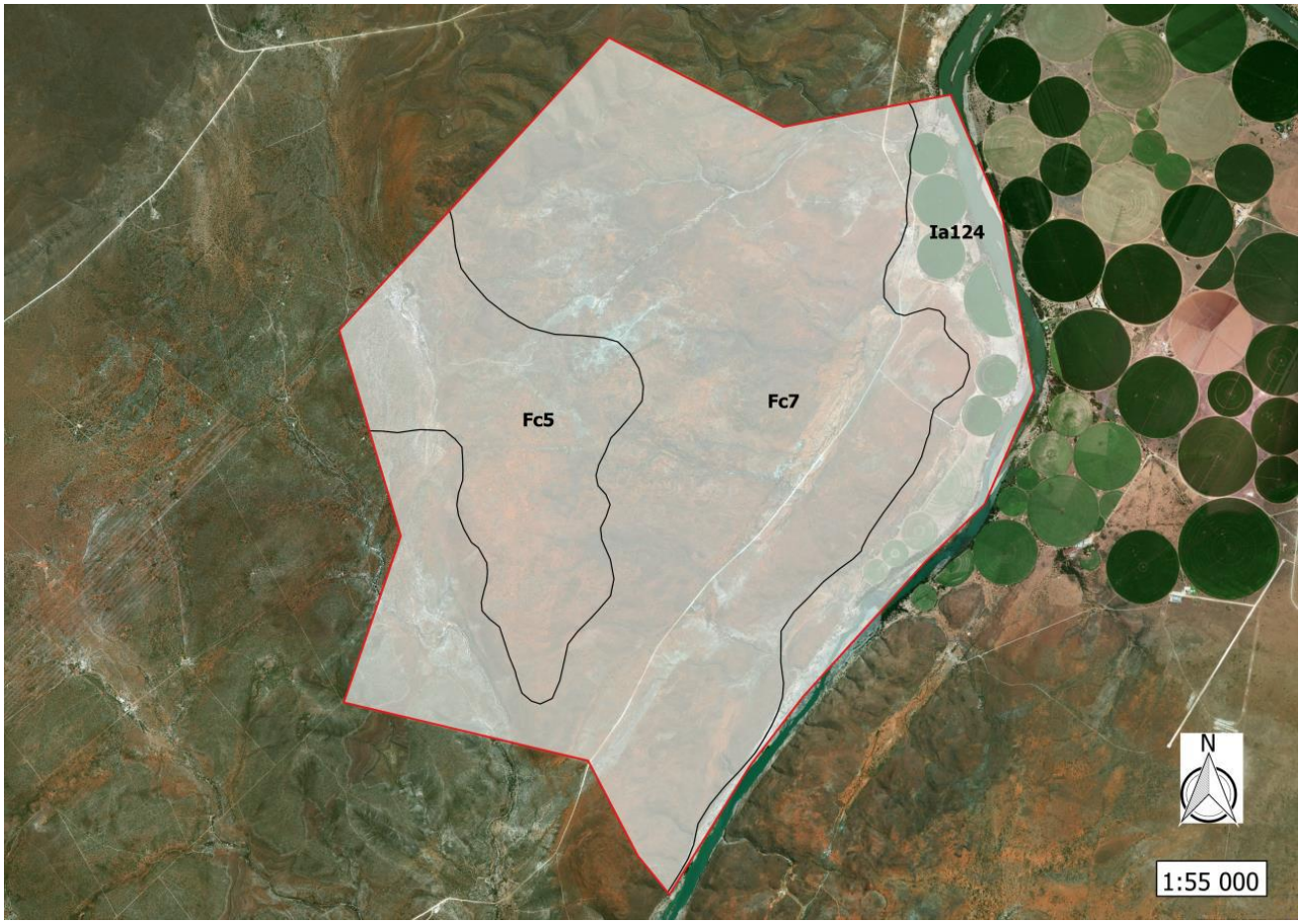


Figure 5: The distribution of land types in the study area.

Climate

The project site is approximately 14 km away from Douglas. The Douglas climate is predominantly semi-arid with low rainfall and high evaporation. Climate plays a vital role in determining the availability of water resources, the nature of the natural landscape and vegetation types. Temperatures are high during the summer and low during the winter. The coldest months are experienced from June to August while the hottest months range from September to March. The average daily temperatures range from 18.5°C in June, to 35°C in January. The mean maximum average temperature during the summer months range from 27 to 34°C, while during the winter months the mean average minimum temperature range from between 5.6 and 7.4°C. The average rainfall is 427 mm. The area also experiences extreme events on a regular basis, including frost, hail, drought, and high speed winds. Prevailing winds are north-westerly with an average speed of 15km/h, between the driest and wettest months; the difference in precipitation is 73 mm. During the year, the average temperatures vary by 15.3 °C.

Topography

The area is characterised by a flat topography. The elevation is approximately 998 m. The terrain morphological class of the area can be described as plains with high relief, either moderately or

strongly undulating. The area lies at an altitude of 1 115 meters above sea level, with the highest elevations occurring in the east. Orange River flows eastward between the Project areas.

Ecology and Biodiversity

The proposed prospecting site falls within critical biodiversity areas, as defined by the Northern Cape Critical Biodiversity Areas Map (Holness and Oosthuysen 2016). This map identifies biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole. The majority of the study site, primarily the central part, comprise of *Critical Biodiversity Area Two*. However, the Orange River channel and its associated riparian vegetation are classified as *Critical Biodiversity Area One*. The hills and ridges in the east are classified as *Ecological Support Areas*. No protected areas occur in or near the study site.

Conversely, the Mining and Biodiversity Guidelines (DENC et al. 2013) does not classify any section of the study area to have biodiversity importance, and therefore does not constitute a high risk for mining. These guidelines were developed 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.

Nevertheless, all rivers (ephemeral and perennial), their riverbeds and associated 100 m buffers have been identified as ecological corridors within the Pixley Ka Seme District Municipality (Rumboll 2014). Here, special care must be taken with mining and agricultural practises so as to avoid water pollution and over extraction. These should be maintained to limit the potential impact of development on the water resources.

The Katlani operation itself is expected to cause habitat transformation along the paleo-terraces of the Orange River through the excavation of open pits, and will thereby contribute to cumulative habitat loss and the disruption of the broad-scale landscape connectivity in the region. The study area falls within a zone where one of South Africa's largest economically most important alluvial deposits of diamonds are found. The primary secondary source of alluvial diamond deposits in the Northern Cape extends along the Orange and Vaal Rivers (Gresse 2003), while the most significant crop irrigation in the Northern Cape also stretches along these rivers (Durand 2006). The cumulative impacts in the vicinity of the study area are therefore considered to be high.

Flora

The region is dominated by the Savanna Biome. This biome is species rich and contains many threatened flora and fauna. The project area is situated within the North Eastern shrubveld grass which is characterised by bushveld. The shrubveld grass also occurs approximately 800m to the south east of the study area. The regional vegetation of the area is, however, used for grazing, mainly by cattle. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the upper layer from dominating, coupled with fires and grazing, which keep the grass layer dominant. This ensures a sustained supply of low quality water into the rivers. The area was used for cattle-farming, it can thus be considered as effectively preserved.

The most distinctive trees in the area are the Camel Thorn (*Acacia erioloba*) and the Camphor Bush (*Tarchonanthus camphorates*). Other prominent trees are the Portly Baobab (*Adansonia digitata*) and the Candelabra tree (*Euphorbia ingens*).

Weeds and invasive species are controlled in terms of the National Environmental Management: Biodiversity (NEMBA) Act 10 of 2004, the Conservation of Agricultural Resources (CARA) Act 43 of 1993, as well as the NCNCA (Schedule 6). These are species that do not naturally occur in a given area and exhibit tendencies to invade that area, and others; at the cost of locally indigenous species. To govern the control of such species, NEMBA and CARA have divided weeds and invader species into categories. All declared weeds and invasive species recorded in

and around the study area are listed in Table 4, along with their categories according to CARA, NEMBA and NCNCA.

Population of sensitive, threatened and protected plant species

The SANBI Red List provides information on the national conservation status of South Africa's indigenous plants, while the National Forests Act (No. 84 of 1998) (NFA) and the Northern Cape Nature Conservation Act (Act No. 9 of 2009) (NCNCA) restricts activities regarding sensitive plant species. Section 15 of the NFA prevents any person to cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister. Section 49 (1) and 50 (1) of the NCNCA states that no person may, without a permit pick, transport, possess, or trade in a specimen of a specially protected (Schedule 1) or protected (Schedule 2) plants. Furthermore, Section 51(2) states that no person may, without a permit, pick an indigenous plant (Schedule 3) in such manner that it constitutes large-scale harvesting.

Most species recorded in the area are classified as least concern; a category which includes widespread and abundant taxa. However, one species, i.e. *Hoodia gordonii*, is listed as "Data Deficient – Insufficient information". This species was encountered during the field survey in the shrubland on calcrete ridges at very low densities. *Hoodia gordonii* is declining as a result of indiscriminate harvesting for its appetite suppressant properties, but not enough information is available to quantify the degree of decline.

Species protected in terms of the National Forests (NFA) Act No 84 of 1998 include *Boscia albitrunca*. This species is also protected according to the NCNCA (Schedule 2) and occurs widespread across the study area and is found in virtually all vegetation units (Figure 13), but was not seen in the disturbed watercourse. On the higher banks of the riparian woodland they are found at a density of seven individuals per hectare as large trees, forming dense canopies up to 3 m high and 5 m wide. On the Ventersdorp lava ridges they are found at lower densities of about 2 individual per hectare and primarily occur as adult trees of up to 1 - 8 m (w) x 2 - 4 m (h). On the calcrete ridges they occur as stunted individuals (20 cm (h) x 40 cm – 1 m (w)) and adult trees (3 - 5 m (w) x 2 m (h)) at densities of 3 individuals per hectare. In the ephemeral drainage ways and the pan they are also abundant and primarily occur in the form of adult trees. In order to damage or remove any of these trees (seedlings to adults) an application must be submitted to the Northern Cape Department of Agriculture, Forestry and Fisheries (DAFF) and a licence obtained from DAFF at least three months prior to such activities.

Aloe claviflora and *A. hereroensis* are found on the shallow rocky soils of the Ventersdorp lava thornveld at high and low densities, respectively. *Euphorbia davyi* is also restricted to the latter community, but occurs at very low densities. *Pachypodium succulentum* and *Jamesbrittenia tysonii* is restricted to the calcrete ridges and found at moderate and low densities, respectively.

Ornithogalum flexuosum is found on the riparian floodplains at moderate densities. *Ruschia griquensis* occurred in the disturbed watercourse at high densities, while *Olea europaea* is restricted to the drainage lines and occur as large trees at densities of one to three individuals per kilometre. *Gymnosporia buxifolia* was found on the calcrete ridges and the drainage lines at low densities.

In addition to those protected species listed above; according to Section 51(2) of NCNCA, a permit is required from the Northern Cape, Department of Environment and Nature Conservation (DENC) for any large-scale clearance of all indigenous (Schedule 3) vegetation, at least three months before such activities commence.

Fauna

The wildlife on site and in the surrounding area is typical of disturbed Highveld region where all but the small animals such as hares, duikers, rodents, birds and insects have been eradicated. Rine

Rabbit (*Bunolagus monticularis*) is found in limited habitats in the southern Karoo). It is regarded as one of the world's rarest mammals with an estimated adult population of less than 250. In August 2003, the Riverine Rabbit Program (EWT-RRP) was established to co-ordinate all conservation efforts of this species and its habitat The Northern Cape, especially the Kalahari, is a primary bird habitat. Raptors that occur include Black Eagle (*Aquila verreauxii*), Tawny Eagle (Aquila rapax), Black-breasted Snake Eagle (*Circaetus pectoralis*), Jackal Buzzard (*Buteo rufofuscus*), Pale Chnating Goshawk (*Melierax canorus*), Rock Kestrel (*Falco tinnunculus*) and Pygmy Falcon (*Polihierax semitorquantus*), etc.

The Katlani prospecting area lies within the distribution range of at least 36 reptile species (see Appendix 2), of which none are of international or national conservation concern. However, most are protected either according to Schedule 1, 2 or 3 of NCNCA, except for agamas, geckos and skinks.

Specially protected species include *Karusasaurus polyzonus* (Southern Karusa Lizard) and *Chamaeleo dilepis dilepis* (Namaqua Chamaeleon).

The habitat diversity for reptiles in the study area is high. The rocky ridge slopes are considered to be the most important habitat for reptile diversity at the site, while the ephemeral pan could potentially provide a special habitat for the marsh terrapin.

Eleven amphibian species are known from the region (Appendix 2). Low amphibian diversity is normal for an arid area, but is likely to increase within the aquatic and wetland ecosystem of the Orange River and ephemeral streams. As a result, higher amphibian diversity is most likely to be found in these habitats, while only those species which are relatively independent of water are likely to be common in the terrestrial habitats.

The Giant Bull Frog (*Pyxicephalus adspersus*) is listed as Near Threatened and is protected according to Schedule 1 of the NCNCA. They prefer seasonal shallow grassy pans, vleis and other rain-filled depressions in open flat areas of grassland or savanna, but mainly remain buried up to 1 m underground until conditions become favourable. The site lies within the known distribution of this species and the ephemeral pan could potentially provide the ideal habitat for this species. All other amphibians of the study area are protected according to Schedule 2 of NCNCA

The study site does not fall within or near (< 100 km) any of the Important Bird Areas (IBA) defined by Birdlife South Africa. A total number of 261 bird species have been recorded from the region and all of these species are protected either according to Schedule 1, 2 or 3 of NCNCA. This suggests that the area has been reasonably well sampled and that the species list is likely to be fairly comprehensive.

As many as 25 listed bird species are known from the region, all of which are classified as Vulnerable, Near Threatened or Endangered. Furthermore, all birds are protected either according to Schedule 1, 2 or 3 of NCNCA.

Those that are specially protected (Schedule 1) are also listed. Of these, the African Fish-Eagle (Schedule 1 of the NCNCA) was heard calling from the direction of the Orange River during the field visit. They are usually associated with large waterbodies where they forage up to 10% of the day for fish. They require tall trees for nesting within 100 m from water, with *Eucalyptus* spp. being one of their favoured nesting trees. This species therefore has a very high probability to breed in the riparian woodland on site.

Fish species expected to occur in the active channel of the Orange River is listed in Table 8, along with their IUCN status and sensitivity to physico-chemical and no-flow conditions. The Largemouth Yellowfish is endemic to the Orange-Senqu and Vaal River systems in the Orange-Senqu River Basin. It is also listed an Near Threatened (IUCN 2019) due to the continuous decline in water quality in most rivers and streams in its geographic range, the destruction of suitable spawning beds due to erosion, as well as their slow growth rate, late maturing and low fecundity. No prospecting activities are planned near the river and therefore the Katlani operation is not expected to have any impacts on the fish communities of the region.

Invertebrates dominate inland habitats and play a significant role in the overall function of the ecosystem (Kremen et al. 1993; Weisser and Siemann 2004). Their immense species diversity

makes it almost impossible to list all species that may possibly occur on site. Nevertheless, key morphospecies as well as species of conservation concern are discussed here.

Eight invertebrate species of the Northern Cape appear on the IUCN Red Data list of threatened species and are listed, along with species that are specially protected according to Schedule 1 of the NCNCA. All other invertebrates from the class Insecta and Arachnida are protected either according to Schedule 2 or 3 of the NCNCA.

Three major habitats delimit possible invertebrate communities on site, i.e. the perennial Orange River, the ephemeral pan and a variety of terrestrial habitats collectively classified as Karoo vegetation for insect preference, according to Picker et al. (2004).

Heritage and Cultural Resources

For ease of reference, see Annexure D of this report in order to get more detailed information about heritage and cultural resources.

Stone Age material occurs with a wide distribution over the plains and on the base of the ridges (38 sites). While much of the land along the banks of the Orange River has been turned to irrigation it appears that there was hunter-gather activity before. The Stone Age material comprises scrapers, blades, cores and flakes typologically dating to the Middle Stone Age/Late Stone Age period. The frequent occurrence of flaked cores indicates manufacturing, but no concentrations of artefacts were observed. Overall, the distribution pattern seems to indicate general hunter-gatherer activity in the area over time. None of the sites found warrant further action.

The Late Stone Age petroglyphs at Site KAT13 and Site KAT14 exemplify the remarkable art heritage of the area. The first site is apparently known and a record should exist in SAHRIS as a team from the University of Cape Town is reported to have visited the site. Site KAT14 is an extension of KAT13. Names have been etched in the recent past by visitors apparently ignorant of the damage to the site. Such actions must be stopped, the property owners were advised. Declaration of the sites to Grade II (Provincial) status may contribute to strengthening protection measures.

Potsherds were found in two places close to the bank of the Orange River (Site KAT31, Site KAT32). A later Iron Age date is proposed. Noting that pottery was also found on the bank of the Vaal River near Schmidtsdrift a pattern seems to be emerging. Pot making and use may be attributed to the BaTlhaping who lived in the area in the 18/19th century may descend from earlier Later Iron Age communities. Otherwise the hypothesis that Stone Age people did not have the knowledge to make or use pots is brought into question. The finds do not warrant further action.

There are two buildings at the farmstead carrying ornate Cape Dutch style gables Site KAT12). There is a simple gabled structure used as church (KAT17). There are no compelling circumstances for alteration or destruction of these buildings. An old stone enclosure used as a cattle pen located on the plateau is a substantial structure which must be protected (Site KAT36).

There are two burial grounds on the farm (Site KAT01, Site KAT28). The first site holds more than 30 graves all of members of Griqua families connected with the farm. Some of those interred at the second site are reported to be victims of a mining accident happening in the 1940s on the Orange River 300 m away, where an attempt to divert the channel in order to mine diamonds on the river bed failed with some of the miners having been swept away by sudden flooding and drowned. These sites are enclosed with barbed wire fencing and are clearly visible. They must be protected in terms Section 36 of the NHRA.

Forty-nine sites (49) sites were recorded of which a plan must be put in place to protect nine (9) of the sites. There are two burial grounds (KAT01, KAT28) historic buildings and a church (KAT12, KAT17). There are two examples of cultural landscapes (KAT07, KAT35 and a stone structure worth protecting (KAT36). The petroglyphs at KAT13, KAT14 are extremely sensitive in terms of

the potential threats expected. The remainder of the sites are medium value and no further action was considered necessary.

Air Quality

The air quality of the pre-mining period is expected to have been of a better quality; however, the existing mines in the surrounding areas also contribute to the air quality degradation. The main concern in this regard would however be dust from the proposed diamond mining settling on surrounding areas. However, a dust control plan will be implemented for the proposed project in order to control any possible nuisance dust that might give rise from the surrounding.

Wetlands

A wetland as defined by the National Water Act refers to 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 under normal circumstances supports or would support vegetation typically adapted to life in water saturated soil. However, there are no wetlands in the region surrounding the project area.

The aim of the study was to conduct an integrated ecological wetland and riparian zone assessment within the Farm Katlani 236, Mazelsfontein in order to identify and delineate all wetland areas in riparian zones within the prospecting area, assess their ecological integrity and ecological services provided as well as to assess the potential impacts that the proposed diamond prospecting activities may pose on the receiving wetland ad riparian areas. The standardized South African methodology was employed for the purposes of this study, primarily using the practical field procedure for identification and delineation of wetlands and riparian areas as described by the DWAF (2005).

The proposed prospecting area falls under the Siyancuma Local Municipality which forms part of the greater Pixley ka Seme District Municipality. The prospecting area is situated approximately 15 km downstream of the town of Douglas immediately on the left bank of the Orange River in Siyancuma Local Municipality in the Northern Cape Province. The proposed prospecting area is located in a dry region with a harsh climate, consisting of cold, dry winters and hot, semi-dry summers. The region receives between 200 and 300 mm of rain annually, with the local weather station receiving a mean annual precipitation of 235.3 mm. Owing to the arid nature of the region and the topography, there are no natural lakes or wetlands of note in the area. The Orange River is the main source of water supporting the predominant land use activities in the area namely agriculture and mining (particularly wheat, lucerne, potatoes cattle and cotton and cattle farming). Because of the Orange River and the Vaal River flowing through the area there is intensive crop farming activities on the banks of these rivers. Hence, the irrigation-fed agriculture along the Orange River to the south of the site is a critical element of this arid, low productivity region. Nearly 70% of the total surface runoff, which would flow through the area under natural conditions, originates from Lesotho territory, and just more than 30% from within the South African portion of the area.

Prior to conducting the physical site visit and wetland delineation on the prospecting area an initial level 1 (desktop) survey was done using current aerial imagery from Google Earth for ease of interpretation. A site visit was conducted in July 2019 to confirm and delineate the wetland and riparian areas detected during the desktop analysis. No wetland conditions as defined by the National Water Act, 1998 (Act 36 of 1998) were recorded during the desktop assessment of available data or during the field surveys during which soil and vegetation sampling were conducted within the farm Katlani 236. No wetland areas were identified within the prospecting area. No NFEPA wetlands were identified within the Katlani Diamond Mine Prospecting Area.

An extensive network of dry, seasonal streams was observed ranging from a few meters in width to 20 meters in width. No signs of saturation indicative of wetland conditions or riparian areas was associated with the network of dry seasonal streams. It was observed that the vegetation along the seasonal streams was homogenous with the terrestrial vegetation. This phenomenon can be attributed to the arid and dry conditions associated with the region where these seasonal streams seldom flow, and only flow as a result of incidental high rainfall. It was therefore concluded that the hydrology of the site was characterized by the rapid drainage of surface water

in such a way that soil saturation or permanent flows did not occur. Although these seasonal streams are mostly dry and do not support distinct riparian vegetation or aquatic environments, the seasonal streams should still be considered as sensitive areas as they form an integral part of the regional hydrological processes. Riparian areas associated with the Orange River were identified and delineated primarily based on alluvial soils and vegetation structure. The Orange River Riparian Zone identified on site forms the western boundary of the prospecting area. The riparian habitat associated with the Orange River was determined to be Largely Modified (PES category D) indicating a system that has experienced a large loss of natural habitat, biota and basic ecosystem function. The large loss of natural habitat was attributed to vegetation clearing, alien vegetation encroachment and the alteration of the Orange River flooding regime as a result of the surrounding land use activities.

Hydrogeology

According to the Hydrogeological Map of the Republic of South Africa (Sheets 2722 – Kimberly 1:500 000) the main water bearing strata in the area is an intergranular and fractured aquifer made up of sandstone and conglomerate rocks.

According to the map, groundwater resources are generally limited, with sustainable borehole yields ranging from 0.6 – 1.7 l/s. The groundwater quality is thought to be good, with total dissolved solids (TDS) of less than 300mg/l. In intergranular and fractured aquifers, the water occurs in both the upper weathered rock zone and the fractured but fresh rock formation below. These zones are in hydraulic contact. The regional aquifer system is defined as a Minor Aquifer System (Parsons, 2005) with low to moderate vulnerability to contamination. Minor Aquifer Systems can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. The aquifer extent may be limited and water quality may be variable. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and in supplying base flow to rivers.

Local Hydrogeology - Two types of aquifer systems have been recognized in the Project area, represented by:

- Weathered Aquifer - The Ecca sediments are weathered to depths between 5 – 15 metres below surface throughout the area. The upper aquifer, typically perched, is associated with this weathered zone and water is often found within a few metres of the surface (Hodgson, 2001). This aquifer is recharged by rainfall which infiltrates into the weathered rock and soon reaches an impermeable layer of shale, underneath the weathered zone. The movement of groundwater on top of this layer is lateral and in the direction of the surface slope (Hodgson, 2001).
- Fractured Aquifer - The pores within the Ecca sediments are too well cemented to allow any significant permeation of water. All groundwater movement is therefore along secondary structures, such as fractures, cracks and joints. These structures are better developed in competent rocks such as sandstone, hence the better water-yielding properties of the latter rock type (Hodgson, 2001). It should, however, be emphasised that not all of the secondary structures are water-bearing. Many of these structures are closed due to compressional forces and the chances of intersecting a water-bearing fracture by drilling therefore decreases rapidly with depth. Water-bearing fractures with significant yields have been observed at depths of approximately 30m; these boreholes would, however, have insufficient yields for organised irrigation (Hodgson, 2001).

Groundwater Levels and Flow Direction – Groundwater depths range from 0 to 30 mbgl. In general, groundwater follows the topographical setting of the area.

The regional groundwater flow direction appears to be to the south-west towards the Orange River. However, locally and on a small scale, flow directions can vary largely depending on topographic features.

• Groundwater Recharge - According to the Groundwater Resources of the Republic of South Africa Map aquifer recharge in the area is between 50 - 75mm/a.

Regional Hydrology

The proposed Katlani Diamond Mine prospecting area is located down gradient of the confluence of the Vaal River and the Orange River within the Lower Orange Water Management Area. The Orange River originates in the Lesotho Highlands at elevations of about 3 300m above sea level. In Lesotho the Orange River is known as the Senqu River and only when it enters the Republic of South Africa (RSA) is it referred to as the Orange River. The river flows west for approximately 2 200km to the Atlantic Ocean and for the last 600km forms the border between the RSA and Namibia. The Vaal River catchment varies in elevation from about 3 200m above sea level at the South Eastern boundary in the Drakensberg to approximately 970m above sea level at its confluence with the Orange River close to Douglas. Downstream of Douglas the Orange River is joined by the Ongers/Brak River and the Hartbees River from the south and the Molopo and Fish Rivers from the North. The Molopo and its tributary the Nossob form the boundary between the RSA and Botswana while the Fish River drains a large portion of the Orange River catchment within Namibia (H Mare, August 2007). The Orange River catchment (excluding the Vaal River catchment) is divided into seven main sub-catchments are Senqu, Upper Orange, Caledon, Lower Orange RSA, Lower Orange Namibia, Lower Orange Botswana and Fish river Namibia.

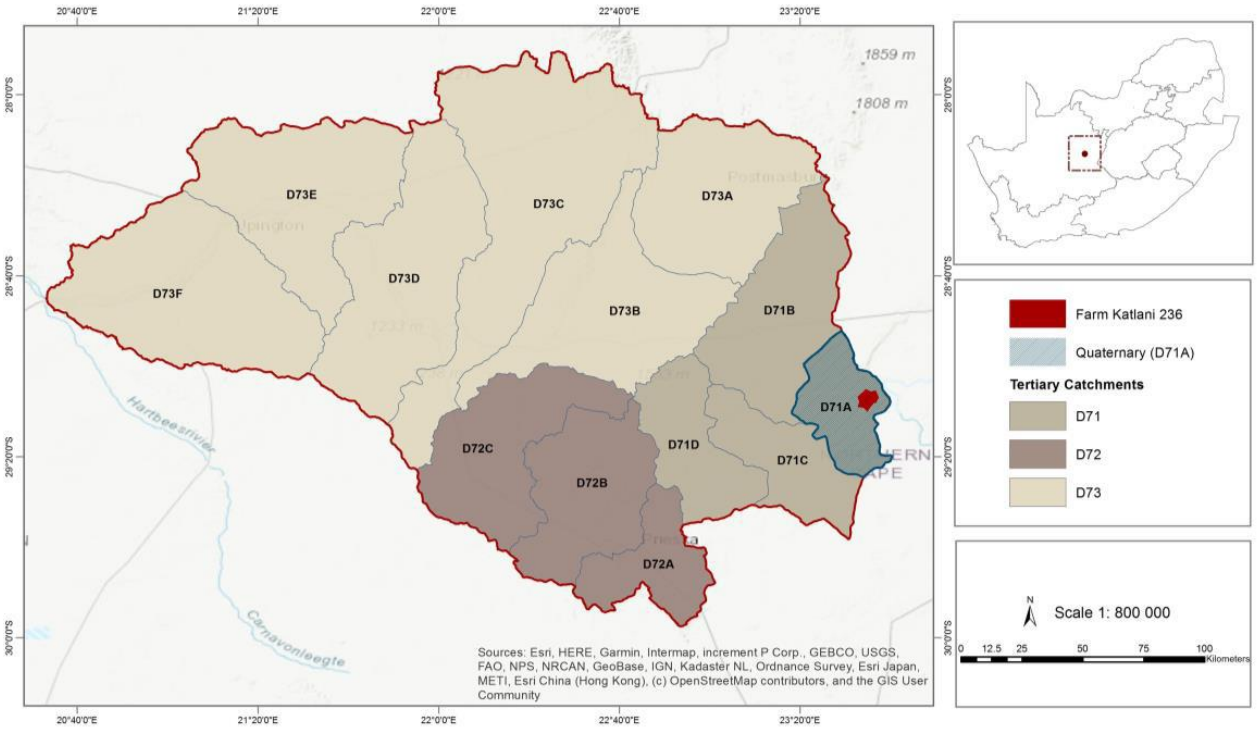


Figure 6: Indicating the secondary catchment area in relation to the farm Katlani 236

Local Hydrology

The proposed Katlani Diamond Mine Prospecting Area is located in the Orange River basin, quaternary catchment D71A. The prospecting area is situated directly on the bank of the Orange River which drains in a westerly direction directly to the Orange River. The quaternary catchment D71A has a net mean annual runoff (MAR) of 0.9 million cubic meters (mcm), and is based on the WR2005 study.

The slope of a catchment is a very important characteristic in the determination of flood peaks. Steep slopes cause water to run faster and to shorten the critical duration of flood inducing storms, thus leading to the use of higher rainfall intensities in the runoff formulae. On steep slopes the vegetation is generally less dense, soil layers are shallower, and there are fewer

depressions, all of which cause water to run off more rapidly. The result is that infiltration is reduced and flood peaks are consequently even higher.

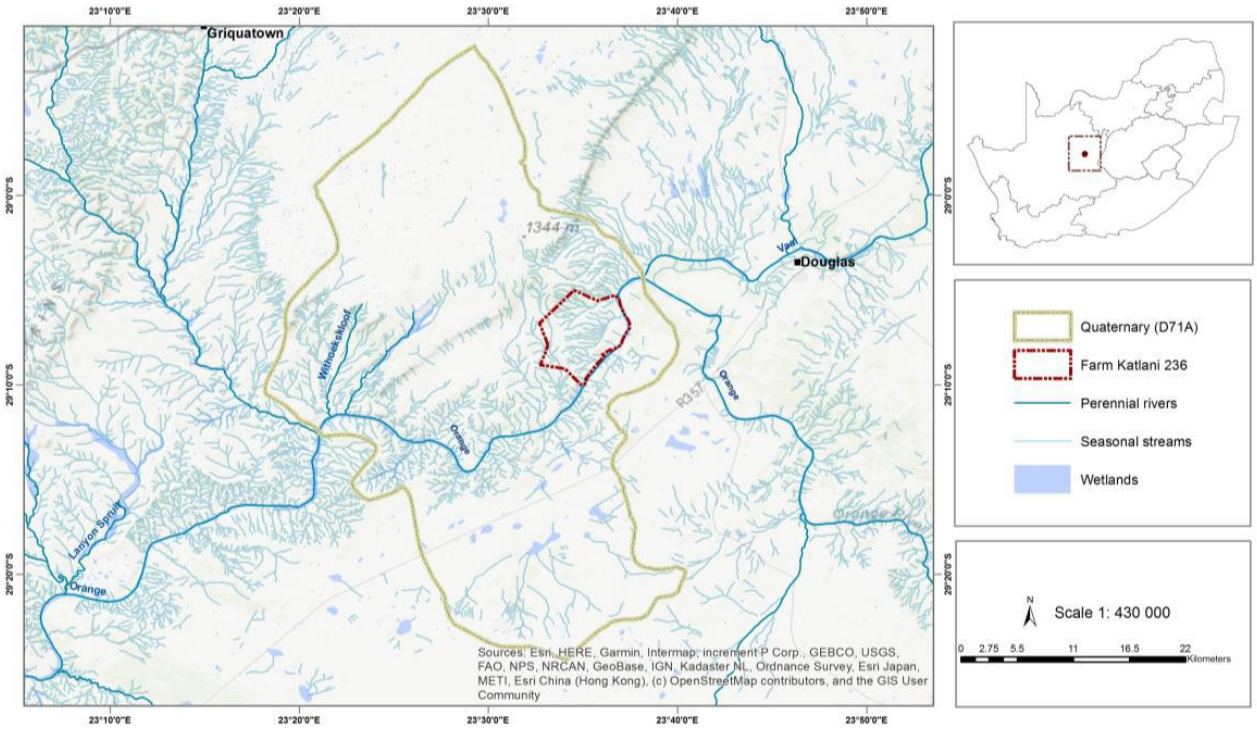


Figure 7: Indicating Quaternary Catchment D71A in relation to the prospecting area (farm Katlani 236)

Site sensitivity

The sensitivity map for the Katlani prospecting operation is illustrated in Figure 16. The riparian woodland along with the ephemeral drainage ways, disturbed watercourse and ephemeral pan are considered to be of **very high** sensitivity due to their vital ecological and hydrological functionality and significance. All watercourses in the study area are also unique habitats protected in terms of the National Water Act (Act No 36 of 1998). These units are essentially no-go areas. The thornveld on Ventersdorp lava and open shrubland on calcrete ridges are considered to be of **high** sensitivity, primarily because of the high occurrences of species of conservation concern that occur widespread across this unit. Although these units are not regarded as no-go areas, activities should only proceed with caution as it may not be possible to mitigate all impacts appropriately. The area that has been transformed for agriculture is considered to be of **low** ecological sensitivity and if any prospecting activities occur here, it is not expected to have an impact on the ecological processes and biodiversity. Most types of activities can proceed within these areas with little ecological impact. Figure 6 depicts a picture of application area environmental sensitivity.

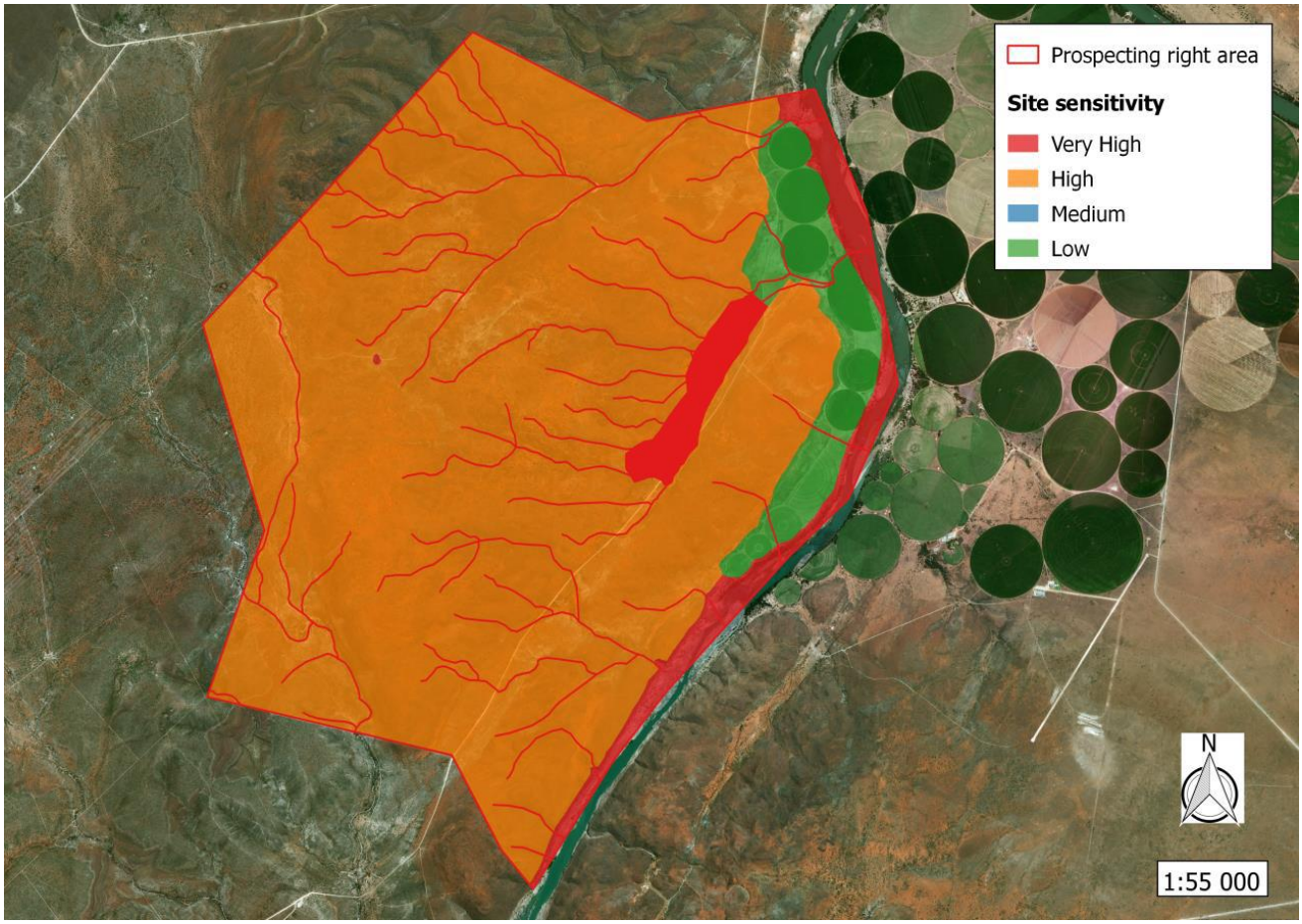


Figure 8: A sensitivity map for the Katlani 236 prospecting area.

(b) Description of the current land uses.

The farm land in the broader region is mostly used for agriculture in the form livestock grazing, with many small-scale to medium-scale mining operations found throughout the region. The site is covered with indigenous vegetation of mixed shrubland/grassland, as well as alien bushtrees. There is also historic evidence of mining activities around the site, in the form of shallow holes and spoil heaps that have eroded with time. The majority of the land area is used for cattle grazing and, as such, is degraded from its natural state. The proposed area consists of non-perennial rivers, along the banks of Vaal Orange River, Slimes dam, Mine Shaft, Historic mining, furrow, farms, where applicable a Water Use License Application will be launched for conducting prospecting operations.

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

Refer to the description above.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

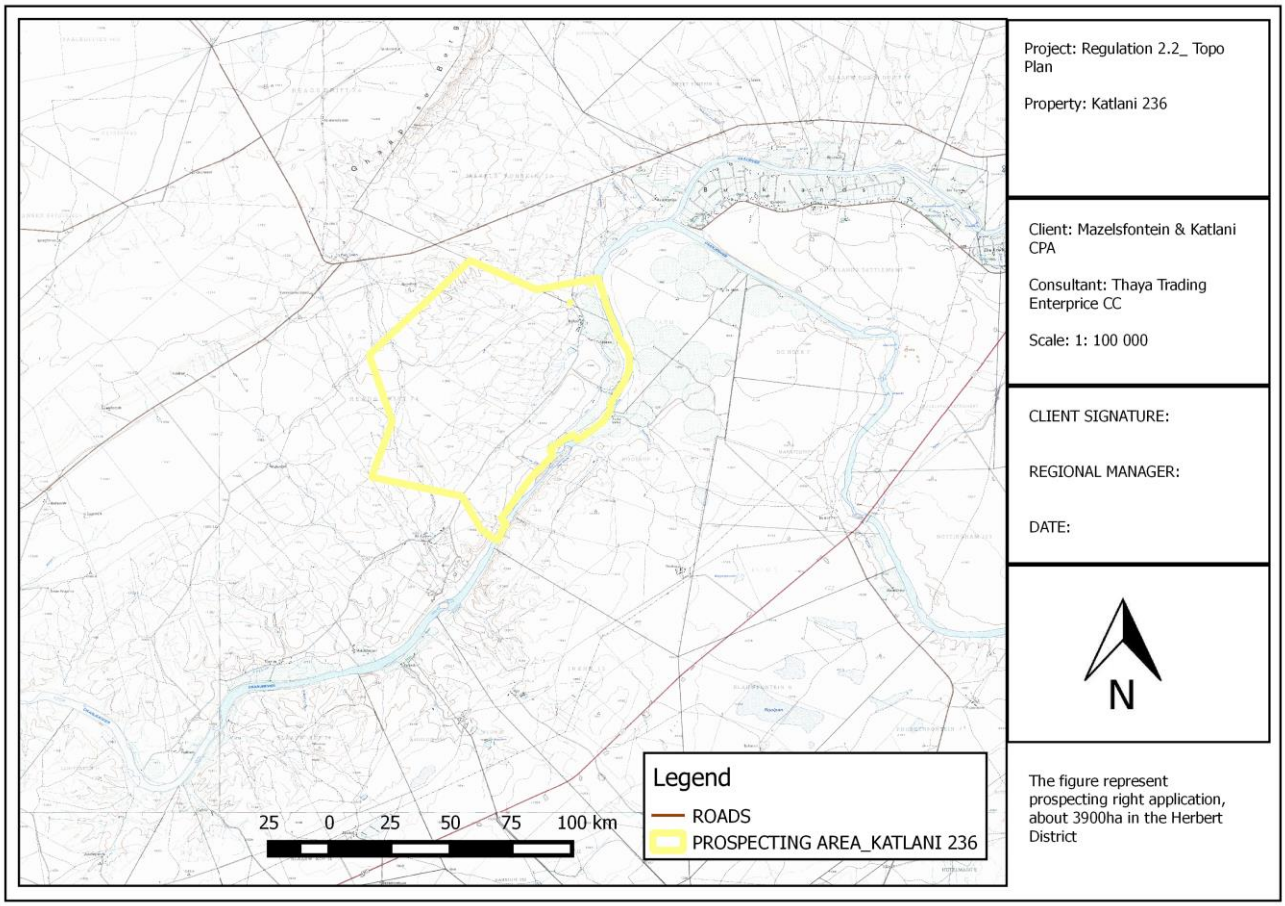


Figure 9: Current land use Map

v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

(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. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Table 6: Potential impacts identified

Environmental Factor	Nature of impact	Significance	Probability	Duration	Consequence	Management
Geology and mineral resource	Sterilisation of mineral resources.	Very low	Highly unlikely	Decommissioning	Insignificant	Ensure that optimal use is made of the available mineral resource.
Topography	Changes to surface topography due to topsoil removal, excavations and	Low to medium	Certain	Post-closure	Moderate	Backfill all excavations continuously and employ effective rehabilitation strategies to

	placement of infrastructure and development of mine residue deposits.					restore surface topography of excavations and plant site, and to stabilise the mine residue deposit.
Soils	Soil erosion by water and wind on disturbed and exposed soils; potential for dust production and soil microbial degradation; potential contamination of soils due to spillages.	Low	Possible	Life of operation	Minimal	Employ appropriate management strategies to preserve soil resources.
Land capabililty	Loss of land capability through topsoil removal, disturbances and loss of soil fertility.	Very low	Possible	Short term	Minimal	Employ appropriate rehabilitation strategies to restore land capability.
Land use	Loss of land use due to poor placement of surface infrastructure and ineffective rehabilitation	Very low	Possible	Short term	Minimal	Carefully plan the placement of infrastructure and employ rehabilitation strategies to restore land capability.
Ground water	Pollution of underground water sources.	Low	Possible	Decommissioning	Minimal	Construction of measures to prevent seepage into the groundwater by biological and engineering means. Implementation of the necessary management programs to ensure the integrity of ground water resources.
Surface water	Deterioration in water quality through spillages	Medium - High	Certain	Decommissioning	Critical	Frequent monitoring of surface water resources (Standing water). Prevention of overspill of mine associated activities into the surrounding drainage channels streams. Implementation of the

						necessary management programs to ensure the integrity of surface water (Standing water) resources.
Indigenous flora	The clearance of vegetation; potential loss of floral species with conservation value; potential loss of ecosystem function.	Medium to High	Certain	Life of operation	Major	Prevention of overspill of mine associated activities onto the surrounding ecological environment. Employ proper protection and rehabilitation strategies.
Alien invasive plants	Proliferation of alien invasive plants species.	Medium	Certain	Decommissioning	High	Eradicate, and control the spread, of alien invasive species.
Fauna	Displacement of fauna	High	Possible	Life of operation	Minimal	Prevention of overspill of mine associated activities onto the surrounding ecological environment. Employ proper protection strategies.
Habitat	The loss, damage and fragmentation of floral and faunal habitats; potential loss of ecosystem function.	High	Certain	Residual	Critical	Prevention of overspill of mine associated activities onto the surrounding ecological environment. Employ proper protection and rehabilitation strategies.
Air quality	Sources of atmospheric emission associated with the prospecting operation are likely to include fugitive dust from materials handling operations, wind erosion of stockpiles, and vehicle entrainment of road dust.	Low	Certain	Decommissioning	Minimal	Effective soil management; identification of the required control efficiencies in order to maintain dust generation within acceptable levels.
Noise and vibration	Increase in continuous noise levels; the disruption of current ambient noise levels; and the	Low	Certain	Decommissioning	Minimal	Minimise the generation of excessive noise and vibration; Ensure all vehicles and equipment is

	disruption of sensitive receptors by means of increased noise and vibration.					in a good working order; proper communication.
Visual impacts	Visual impact of the mine infrastructure , excavations, mine residue deposits, and waste rock stockpile; visibility of dust.	Low	Possible	Decommissioning	Minimal	Effective planning of the location of infrastructure and operations to minimise visual impact.
Traffic	Potential negative impacts on traffic safety and deterioration of the existing road networks	Low	Low	Decommissioning	Minimal	Utilise existing access roads, where applicable; implement measures that ensure adherence to traffic rules.
Heritage resources	The deterioration of sites of cultural and heritage importance.	Medium to High	Certain	Residual	Major	Preservation and protection of heritage and cultural resources identified within a no go zone; further resources uncovered during prospecting activities need to be reported to a suitably qualified Archaeologist and/or Palaeontologist.
Socio-economic	Negative: Loss of agricultural potential; influx of workers to the area increases health risks and loitering (resulting in lack of security and safety); negative impact of employment loss during mine closure.	Low to medium	Certain	Short-term and Closure	High and Major	Application of commitments made in the Social and Labour Plan; implementation of community development programmes
Interested and affected parties		Low to medium	Possible	Decommissioning	High	Ensure continuous and transparent communication with IAP's.

vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(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).

The criteria used to assess the significance of the impacts are discussed below. The criteria used to assess the significance of the impacts are shown in the table below. The limits were defined in relation to mining characteristics. Those for probability, intensity/severity and significance are subjective, based on rule-of-thumb and experience. Natural and existing mitigation measures were considered.

These natural mitigation measures were defined as natural conditions, conditions inherent in the project design and existing management measures, which alleviate impacts. The significance of the impacts was calculated by using the following formula:

(Severity +Spacial Scope + Duration) x Probability weighting

For the impact assessment, the different project activities and associated infrastructure were identified and considered in order to identify and analyse the various possible impacts. These include roads and hauling, excavations, temporary waste dumping, topsoil storage, mine residue deposit dam, plant and processing area, temporary office, workshops and ablution facilities, water tanks, diesel tanks, pipeline, other temporary buildings, etc.

Significance of impacts is defined as follows:

No Impact – There will be no impact on the system or any of its parts.

Very Low – Impact would be negligible. Almost no mitigation and/or remedial activity would be needed, and any minor steps which might be needed would be easy, cheap and simple.

Low – Impact would have little real effect. Mitigation and/or remedial activity would be either easily achieved or little would be required or both.

Medium – Impact would be real but not substantial within the bounds of those which could occur. Mitigation and/or remedial activity would be both feasible and fairly easily possible.

High – Impacts of substantial order. Mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these.

Very High – Of the highest order possible within the bounds of impacts which could occur. There would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which was predicted.

Table 7:

Weight	Severity	Spacial Scope	Duration
1	Insignificant/non-harmful	Activity specific/No effect/Controlled	Immediate (0 – 6 months)
2	Minimal / potentially Harmful	Slight permanent deviation / on-site	Short term / construction (6 months- 1 yr)
3	Medium / slightly Harmful	Immediate surroundings / local / outside mine area	Life of operation
4	High / Critical / Serious	Regional effect	Decommissioning
5	Catastrophic / major	National/ Severe environmental damage	Residual
6	Disastrous	Trans boundary effects	Residual

Table 8:

Weight Number	1	2	3	4	5
Frequency					

Probability	Frequency of Impact	Highly unlikely	Rare	Low likelihood	Probable/ possible	Certain
		Practically impossible	Conceivable but very unlikely	Only remotely possible	Unusual but possible	Definite
	Frequency of Activity	Annually or less	6 monthly/temporarily	Infrequent	Life of operation	Life of operation

Table 9:

	CONSEQUENCE (Severity + Spatial Scope + Duration)														
PROBABILITY (Frequency of activity + frequency of impact)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Table 10:

Colour Code	Significance Rtating	Value	Negative Impact Management Strategy	Positive Impact Management Strategy
	VERY HIGH	126 – 150	Improve current management	Maintain current management
	HIGH	101 – 125	Improve current management	Maintain current management
	MEDIUM – HIGH	76 – 100	Improve current management	Maintain current management
	LOW – MEDIUM	51 – 75	Improve current management	Maintain current management
	VERY LOW	26 – 50	Improve current management	Maintain current management
		1 - 25	Improve current management	Maintain current management

vii) 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)

During construction and operation of the prospecting operation, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and slimes dam will alter the topography by adding features to the landscape. Topsoil removal and excavations will unearth the natural topography. The construction of infrastructure and various facilities in the mining area can also result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of infrastructure and excavations, and therefore the areas will be bare and susceptible to erosion.

Protected trees should be avoided as far as possible during invasive prospecting activities. Placement of small access roads and or any other associated infrastructure such as office area and storage areas should avoid slow-growing protected trees as far as possible. Areas with high density protected trees should be regarded as "sensitive" it should be mapped and avoided as far as possible. If protected trees cannot be avoided, a licence must be applied for and obtained prior to disturbance of such species.

A search and rescue of plants of special concern (i.e. endemic species; provincially protected or specially protected species; CITES listed species and TOPS listed species) prior to disturbance of natural vegetation will be done. Succulents such as Aloe species should be rescued and transplanted after obtaining the necessary Flora Permit from the Provincial Department of Environment and Nature Conservation (DENC).

The developer may also need a Flora Permit from the DENC for destruction of natural indigenous, protected or specially protected plant species under the Northern Cape Nature Conservation Act, Act 9 of 2009 (NCNCA). The same applies to TOPS or CITES listed plant species under the NEMBA. The topsoil that is stripped and piled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The declared areas will be rehabilitation, but full restoration of soil might only occur over a number of years, subsequent to the re-establishment of vegetation. Furthermore, improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

During the construction and operation of the prospecting there is a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil unusual unless they are decontaminated. The storage of fuels on site might have an impact on soil if the tanks that are available on site are not properly monitored and maintained to avoid leakages. Then there is the potential that contaminated soil can be carried through runoff to contaminate water resources and soil stockpiled for rehabilitation. Soil pollution is therefore possible, but through mitigation it can be minimised.

The loss of land capability and land use can occur in two ways. Firstly, through topsoil removal, disturbances and loss of soil fertility; and secondly through the improper placement of infrastructure. The site has a land capability for grazing, but grazing activities can still be performed in areas not earmarked for mining, and with proper rehabilitation the land capabilities and land use potential can be restored.

If oil and fuel spillages occur, then it will seep into the underlying aquifers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resourced during runoff episodes. Lack of storm control structures will lead to erosion of stockpiles during heavy rains and runoff will carry suspended solids into the downstream environment. This might cause high silt load and affect stream flow.

Construction and mining activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitation following disturbance events. Vehicle traffic generates lots of dust which can reduce the growth success and seed dispersal of many small plant species. It is expected that protected species will be destroyed during the prospecting operation.

While general clearing of the area and prospecting activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plant establish in disturbed areas, it may cause an impact beyond the boundaries of the mining site. These alien invasive species are thus a threat to surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new

areas could have a high impact on the surrounding natural vegetation in the long term. With proper mitigation, the impacts can be substantially reduced.

The transformation of natural habitats to mining and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to mining activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of road kills of small mammals, birds, reptiles, amphibians and a large number of invertebrates. The construction of the mine and associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected population's genetic make-up. This results in a subsequent loss of genetic variability between meta-populations occurring within the site. Pockets of fragmental natural habitats hinder the growth and development of populations.

During the prospecting operation the abovementioned activities have potential for dust generation. It is anticipated that the extent of dust emissions would vary substantially from day to day depending on the level of activity and the specific operations. The prospecting will add a certain amount of noise to the existing noise in the area. However, levels of noise generated by prospecting activities are low.

The impact of site generated trips on the traffic of the existing roads is experienced to be low. Nevertheless, if road safety is not administered it can have a high impact on the safety of fellow road users.

The prospecting operation, especially during construction, will create a limited number of new employment opportunities. The magnitude of this impact will depend on the number of people that will be employed and the number of contractors sourced. An influx of people into the rural area will possibly impact on safety and security of local residents. During the decommissioning and at closure of the prospecting, staff will most likely be retrenched. This can potentially flood the job market, resulting in people being unable to find new employment for a long period of time. It is normally more difficult for people with highly specialised skills to find employment immediately. Those with fewer skills have more flexibility in the job market.

Economic slump of the local towns after mine closure is an associated potential impact although this will only be a prospecting operation. Income streams from wage bills as well as goods and services contracts (at all geographical levels) will come to an end, reducing the monetary income of individuals and mine-related businesses. People who have derived income directly or indirectly from the project may be inclined to leave the region in search of employment or business opportunities. This could result in further decline of the economy of the region as well as the abandonment of infrastructure. The loss of the mine workforce income will also impact upon non-mine related industries within the local and regional areas, particularly the rental property market and retail and service industries who would have received income during the life of mine from the salaried workforce.

It is likely, however that there will be residual positive economic impacts that are not fully reversed with the closure of the mine, and that the economy will not decline to its original level prior to the development of this project. This is because the mine will generate substantial income for the regional and local economy, both directly and indirectly, during its life.

It is difficult to predict the actual impact of the mine closure in advance, but it is acceptable to assume that the mine closure will have a negative impact on the local and regional economy with a high probability of occurrence, a high severity and a high significance.

Positive impact include employment and training opportunities for people in the local community and local contractors; social upliftment and community development programmes; economic benefits.

viii) 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).

Geology and Mineral Resource

Level of risk: Low

Proposed Mitigation measures

- Ensure that optimal use is made of the available mineral resource through proper planning of the prospecting operations;
- The prospecting should be well planned and delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources;
- No dumping of materials prior to approval by exploration geologist.

Loss of Vegetation and faunal habitat

Level of risk: Medium to High

Proposed Mitigation measures

- Development planning must ensure loss of vegetation and disturbance is restricted to within the minimum and designated areas only;
- Vegetate and irrigate open areas to limit erosion, but take care not to promote erosion by irrigating;
- Removal of vegetation during construction and operation will be minimised to reduce the risk of excessive open areas occurring;
- The extent of the prospecting activities should be demarcated on site layout plans, and no personnel or vehicles may leave the demarcated area except if authorised to do so. Areas surrounding the earmarked site that are not part of the demarcated area should be considered as a no go zone;
- Adhere to existing roads, and if new roads are constructed, these must not cross sensitive areas such as the ridges or drainage lines;
- Protected plant or animal species encountered must be managed in accordance with an accepted management plan for these species;
- Apply for necessary licence and permit with DAFF and DENC;
- A full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance;
- Everyone on site must undergo environmental induction for awareness on not harming or collecting species that are often persecuted out of superstition and to be educated about the conservation importance of the fauna occurring on site;
- Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert;
- Employ measures that ensure adherence to the speed limit to lower the risk of animals being killed on the roads.

Topography

Level of risk: Medium to High

Proposed Mitigation measures

- Backfill all trenches/excavations continuously;
- Employ effective rehabilitation strategies to restore surface topography of excavations and plant site;
- Stabilise the mine residue deposits;
- All temporary infrastructure will be demolished during closure.

Soil Erosion

Level of risk: Medium to High

Proposed Mitigation measures

- At no point may plant cover be removed within the no-development zones;
- All attempts must be made to avoid exposure of dispersive soils;
- Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased;
- Ground exposure should be minimised in terms of the surface area and duration, wherever possible;
- The prospecting operation must co-ordinate different activities in order to optimise the utilisation of the excavated trenches and thereby prevent repeated and unnecessary excavations;
- Construction that required the clearing of large areas of vegetation and excavation should ideally occur during the dry season only;
- Construction during the rainy season (November to March) should be closely monitored and controlled;
- The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers;
- The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion;
- All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses;
- Excavated and stockpiled soil material are to be stored and bermed on theM higher laying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate;
- Stockpiles susceptible to wind erosion are to be covered during windy periods;
- Audits must be carried out at regular intervals to identify areas where erosion is occurring;
- Appropriate remedial action, including the rehabilitation of the eroded areas, must occur;
- Rehabilitation of the erosion channels and gullies;
- The prospecting operation should land with steep slopes;
- Dust suppression must take place, without compromising the sensitive water balance of the area;
- Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.

Generation of waste

Level of risk: Low to Medium

- All waste produced to be disposed of in permitted designated waste disposal site;
- Waste must be stored in designated areas for storage;
- Clearly demarcate and label appropriate storage for the different types of waste;

- Ensure regular removal of waste on site to prevent attraction of pests and disposal of waste in a permitted disposal site at a licenced landfill site.

Soil Pollution

Level of risk: Low

Proposed Mitigation measures

- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution;
- Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site;
- Hydrocarbon spill containing mats or pads should be utilised at workshop or under redundant machinery;
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures;
- All facilities where dangerous materials are stored must be contained in a bund wall;
- Vehicles and machinery should be regularly serviced and maintained.

Land Capability and Land Use

Level of risk: Medium

Proposed Mitigation measures

- Ensure that optimal use is made of the available land through consultation with land owner and proper planning of prospecting activities;
- Surface agreement to be signed with land owners;
- Employ effective rehabilitation strategies to restore land capability and land use potential of the farm;

- All activities to be restricted within the demarcated areas;
- Ensure that land which is not used during construction is made available for grazing.

Groundwater

Level of risk: Low

Proposed Mitigation measures

- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution;
- Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site;
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures;
- All facilities where dangerous materials are stored must be contained in a bund wall;
- Vehicles and machinery should be regularly serviced and maintained;
- Monitor the quality of the boreholes located down-gradient of the mining site;
- Sample according to the sampling method and parameters for analysis is indicated in the Geohydrological study.

Surface Water

Level of risk: Medium to High

Proposed Mitigation measures

- Sufficient care must be taken when handling hazardous materials to prevent pollution;
- Under no circumstances may ablutions occur outside the provided facilities;
- No uncontrolled discharges from the staff camps to any surface water resources shall be permitted;
- If servicing and washing of the vehicles occur on site, there must be specific areas constructed for these activities, which must have concrete foundations, bunding as well as oil traps to contain any spillages;
- A walled concrete and roofed platform, dedicated store with adequate flooring or bermed area and ventilation must be used to accommodate chemicals such as fuels, oils, paints, herbicide and insecticides;
- Oil residue shall be treated with oil absorbent and this material removed to an approved waste site;
- Spill kits must be easily accessible and workers must undergo induction regarding the use thereof;
- At all times care should be taken not to contaminate surface water resources;
- Store all litter carefully to prevent it from washing away or blown into any of the water courses within the area;
- Provide bins for staff at appropriate locations, particularly where food is consumed;

- The prospecting site should be cleared daily and litter removed;
- Conduct on-going staff awareness programmes in order to reinforce the need to avoid littering, which contributes to surface water pollution;
- Some of these proposed mitigating measures may form part of an offset strategy for any loss of the Orange River riparian zone/natural seasonal streams due to the planned prospecting activities.

Wetland Assessment and Riparian Zone Assessment

Level of risk: Medium to High

Proposed Mitigation measures

- If any prospecting activities are to take place within the delineated Orange River Riparian Zones, the associated buffer zone or disturb the network of dry seasonal streams, a Water Use License Application (WULA) must be submitted to the Department of Water Affairs (DWA) as per Section 21 of the National Water Act (Act 36 of 1998);
- A riparian zone offset area must be identified and rehabilitation measure implemented in the offset site as per the offset process;
- The operation must co-ordinate different activities in order to optimise the excavated trenches and thereby prevent repeated and unnecessary excavations;
- Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased;
- Excavated and stockpiled soil material are to be stored on the higher lying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate;
- A storm water management plan must be implemented to ensure that dirty water is contained onsite;
- A storm water management plan must be implemented to prevent run-off from the stock piles;
- Hazardous chemical materials should be stored in bunded areas to prevent leakage into the environment;
- Waste should be regularly removed from the site by suitably equipped and qualified operators and disposed of in approved facilities;
- The mine must have spill procedures in place and specific awareness training. Spill kits from Dritzit or Enertech or Supazorb so if there is a spill it can be cleaned and treated as much as possible and report to authorities in 24 hours;
- Clearly define roles and responsibilities of all personnel during spillage events;

Indigenous Flora

Level of risk: Medium to High

Proposed Mitigation measures

- Minimise the footprint of transformation;
- Encourage proper rehabilitation of mined areas;
- Encourage the growth of natural plant species;
- Ensure measures for the adherence to the speed limit;
- Footprint areas of the prospecting activities must be scanned for Red Listed and protected plant species prior to mining;
- It is recommended that these plants are identified and marked prior to mining;
- These plants should, where possible, be incorporated into the design

layout and left in situ;

- However, if threatened of destruction by mining, these plants should be removed (with the relevant permits and license from DAFF and DENC) and relocated if possible;
- A management plan should be implemented to ensure proper establishment of ex situ individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation;
- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.

All Invasive Plants

Level of risk: Medium

Proposed Mitigation measures

- Minimise the footprint of transformation;
- Encourage proper rehabilitation of mined areas;
- Encourage the growth of natural plant species;
- Mechanical methods (hand-pulling) of control to be implemented extensively;
- Annual follow-up operations to be implemented.

Fauna

Level of risk: Medium to High

Proposed Mitigation measures

- Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of pristine habitats and minimise the overall mining footprint;

- The appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance;
- The extent of the mine should be demarcated on site layout plans, and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as a no go zone for employees, machinery or even visitors;
- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site;
- The ECO must ensure that all contractors and workers undergo environmental induction prior to commencing with work on site;
- The environmental induction should occur in the appropriate languages for the workers who may require translation;
- Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert;
- Employ measures that ensure adherence to the speed limit.

Habitat

Level of risk: Medium

Proposed Mitigation measures

- Prospecting activities must be planned, where possible in order to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type;
- The extent of the prospecting area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance). No construction personnel or vehicles may leave the demarcated area except those authorised to do so.

Impact on health and safety of humans

Level or Risk: Low to Medium

Proposed Mitigation measures

- Training of workers in the correct use of the machinery and/or equipment so as to avoid incidents and training of personnel on compliance to Mine Health and Safety Act;

- Workers to wear Personal Protective Equipment (PPE);

- Hazardous material must be correctly labelled and handled in a safe manner.

Air Quality

Level of risk: Low

Proposed Mitigation measures

- Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for prospecting only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken;
- Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression;
- Where it is logistically possible, control methods for gravel roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads;
- The length of time where open areas are exposed should be restricted. Prospecting should not be delayed after vegetation has been cleared and topsoil removed;
- Dust suppression methods should, where logistically possible, must be implemented at all areas that may/are exposed for long periods of time;
- For all prospecting activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees.

Noise and Vibration

Level of risk: Very low

Proposed Mitigation measures

- Restrict prospecting activities to daytime unless agreements obtained to do 24hr operations;
- Systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events;

- Where possible material stockpiles should be placed so as to protect the boundaries from noise to individual operations;
- Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints;
- Environmental noise monitoring should be carried out at regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.

Visual Impacts

Level of risk: Very low

Proposed Mitigation measures

- Infrastructure should be placed to optimise the natural screening capacity of the vegetation;
- Where practical, protect existing vegetation clumps during in order to facilitate screening during the prospecting operation;
- Remove rubble and other building rubbish off site as soon as possible or place it in a container in order to keep the mining site free from additional unsightly elements;
- Locate the staff camps and the material stockpiles outside of the visual field of sensitive visual receptors;
- Dust suppression procedures should be implemented especially on windy days during earth works;
- Rehabilitation should aim to establish a diverse and self-sustaining surface cover that is visually and ecologically representative of naturally occurring vegetation species;
- Implement a management plan for the post-mining site in order to control the invasion of alien vegetation and to manage erosion, until the site is fully rehabilitated.

Traffic and Road Safety

Level of risk: Very low

Proposed Mitigation measures

- Implement measures that ensure the adherence to traffic rules.

Heritage Resources

Level of risk: Medium to High

Proposed Mitigation measures

- The heritage and cultural resources (e.g. graveyards, ruins, historic structures, fossils etc.) must be protected and preserved by the delineation of a no-go zone if any of these areas are to be found in the prospecting area;
- Intact bedrock strata should be avoided during mining of terrace gravels where possible;
- Stone tools should be avoided where possible and fresh exposure should be recorded before destruction. All stone tool artefacts should be recorded, mapped and collected before destruction;
- Should development necessitate impact on any building structures, the developer should apply for a SAHRA Site Destruction Permit prior to commencement of construction;
- A buffer zone 100 m away from the heritage resources identified may be created;
- The property owners were urged to protect the site KAT13 and KAT14 (please see Annexure D) Declaration of the sites to Grade II (Provincial) status may contribute to strengthening protection measures;

- The proposed Chance Find Protocol must be followed should any fossils be encountered at any stage of this development. As such, if fossils are found once mining has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.

Socio-Economic

Level of risk: Very low

Proposed Mitigation measures

- The mine must ensure that false expectations are not created regarding job creation;
- Jobs must be allocated as advertised and in so far as is possible to local inhabitants;
- Contractors and employees should not be permitted to wander outside the mining area;
- Uncontrolled settlement of contractors and workers outside of the site will be prevented;
- The expectations of what benefits can accure to the community must be managed from the initiation of the project;
- Commitments as set out in the SLP must be attained.

Interested and Affected Parties

Level of risk: Low

Proposed Mitigation measures

- Maintain active communications with IAP's;
- Ensure transparent communication with IAP's at all times;
- IAP's must be kept up to date on any changes in the prospecting operation;
- A complaints management system should be maintained by the mine to ensure that all issues raised by community members are followed up and addressed appropriately.

Motivation where no alternative sites were considered.

The locality of the prospecting operation is based on the location of the possible diamond deposits that have been identified through extensive exploration activities. There is therefore no other alternative with regard to the overall operation footprint.

The location of the central prospecting site and associated infrastructure is primarily based on proximity to the access roads, proximity to the areas earmarked for prospecting and limited additional impact on the environment and heritage resource.

The prospecting activities and methodologies associated with diamond mining (i.e. open pits with continued backfilling) is the only economic viable method currently being used by the diamond fraternity. There is no alternative prospecting method for the prospecting of diamonds. Noteworthy, diamond kimberlite, if encountered, will be dealt with accordingly.

ix) Statement motivating the alternative development location within the overall site. **(Provide a statement motivating the final site layout that is proposed)**

The site layout would have to be determined by taking into consideration factors such as specialist report inputs, spatial and practical mining operation aspects. Considering the nature of commodity of interest, security measures will be considered in order to determine the final site layout.

i) Plan of study for the Environmental Impact Assessment process

a) 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 significant 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.

b) Description of aspects to be assessed as part of the environmental impact assessment process

Table 11

Aspects/potential impacts	Description of the aspect	Specialist studies/technical information
Biophysical Environment		
Impacts on the fauna and flora	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits and the book written by Mucina and Rutherford entitled The Vegetation of South Africa, Lesotho and Swaziland)
Impacts on the air quality	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts on the soil	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts associated with the geology of the site	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impact on existing services infrastructure	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts on ground and surface water	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts on heritage	Refer to Tables: 9&10	Specialists will be

resources		commissioned
Socio/Economic Environment		
Impacts on local employment rate	Refer to Tables: 9&10	EAP assessment (using desktop studies, IDP's and SDF's)
Impacts on visual landscape	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Tables: 9&10	EAP assessment (using desktop studies, site visits)

c) Description of aspects to be assessed by specialists

Both the Archaeological and Palaeontological Impact Assessment Reports based on the study conducted on the area of interest are drafted. Additionally, Wetland and Reparian Assessment, Ecological Impact Assessment Reports were also generated. Hydrological and Geohydrological Impact Assessments were also conducted.

d) Proposed method of assessing the environmental aspects including the proposed method of assessing.

The environmental assessment aims to identify the various possible environmental impacts that could result from the proposed activity. Different impacts need to be evaluated in terms of 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.

e) 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 are used:

Table 12: 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.

f) 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.

g) Particulars of the public participation process with regard to the Impact Assessment process that will be conducted competent authority will be consulted

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 were given the opportunity to review the Scoping. The same will be done for EIR and EMP in accordance with EIA Regulatios. A minimum of 30 days commenting period will be allowed and all stakeholders and I&AP's 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 Northern Cape Province Department of Minerals and Energy.

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 EIA Regulations. 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&AP's comprises of an activity, extent and location description, including a locality map of the proposed activity. 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 relevant information.

h) 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 Mazelsfontein Katlani Communal Property Association near Douglas area to potentially mine Diamond.

- **Activity alternatives**

The Scoping process also needs to consider if the development of a Diamond mine would be the most appropriate land use for the particular site.
Mining of other commodities – It is possible that kimberlite is present on these sites.
Mazelsfontein Katlani Communal Property Association has applied to prospect for Diamond.

Agriculture – Due to the site being arable & non-arable, in terms of crop production, all of the portions of the property are preferred.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?).

- **No-go alternative**

This alternative considers the option of 'do nothing' and maintaining the status quo. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for grazing and/or hunting.

- Compilation of Environmental Impact Report

An EIR will be compiled to meet the content requirements as per EIR Regulations and will also include a draft Environmental Management Programme.

i) 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

Table13: Table to mitigate impacts of activities

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**	**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	Medium to 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 to High
Impacts on visual landscape	dust	Dust control measures	low
Impacts on traffic volumes	dust	Dust control measures	low
Impacts on Heritage and Cultural Recourses	Archaeology and Palaeontology	Construct Buffers and Follow Chance Find Protocol	Medium to High

j) Description of the tasks that will be undertaken during the environmental impact assessment process

i) In 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 diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim.

The prospecting activity 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 Northern Cape 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.

The prospecting activity may not impact on any heritage estate if effectively mitigated referred to in section 3(2) of the National Heritage Resources Act. 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. Alternatively, relevant specialist may be called in to site and in the case of fossils a representative sample may be sent for further studies or preservation.

k) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

a. Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

Specialists have been commissioned for the proposed development.

The archaeologist has recommended that the mine prospecting can go ahead, mindful of the sites that have been flagged for protection. As a standard precaution archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during prospecting operations, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

The palaeontologist has recommended that based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the loose sands of the Quaternary. There is very small chance that fossil may occur in the mudstones of the Dwyka Group tillites so a Fossil Chance Find Protocol should be added to the EMPr: if fossils are found once mining has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.

Based on the findings of the wetland and riparian zone assessment study with proposed prospecting area on the farm Katlani 236, the following recommendations were made:

- No prospecting activities should take place within the delineated riparian zone as well as the proposed buffer zones;
- All prospecting activities should avoid the identified seasonal streams at all costs;
- If any prospecting activities are to take place within the delineated riparian zones, the associated buffer zone or disturb the network of dry seasonal streams, a Water Use License Application (WULA) must be submitted to the Department of Water Affairs (DWA) as per Section 21 of the National Water Act (Act 36 of 1998).
- A 500m buffer zone was recommended around the Orange River Riparian Zone in order to protect the integrity of the system.
- Should any prospecting activities take place within Orange Rive Riparian Zone, a riparian zone offset area must be identified before proceeding with operations.
- The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final EIA and EMPr:
- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit and the Burial Grounds and Graves (BGG) Unit has no objections to the proposed development;
- 38(4)b – The recommendations provided by the heritage specialists are supported and must be adhered to. Further specific conditions are provided for the development as follows;
- A no-go bufferzone of 30 m must be adhered to around the following sites: structures (KAT12, KAT17 and KAT36), and engraved glacial pavements (KAT13 and KAT14);
- The 100 m no-go buffer zone around the graves is supported;
- A Heritage Management Plan (HMP) inclusive of a monitoring schedule and reporting procedure must be developed for the in-situ protection and management of heritage resources identified within the development area. This HMP must be developed prior to the commencement of prospecting activities and submitted to SAHRA for comment;
- 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)d – See section 51(1) of the NHRA;
- 38(4)e – The following conditions apply with regards to the appointment of specialists:
- i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The Final EIA and EMPr must be submitted to SAHRA for record purposes;

- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.
-

b. Description of any assumptions, uncertainties and gaps in knowledge.
(Which relate to the assessment and mitigation measures proposed)

Uncertainties form part of any proposed development pertaining the accuracy of the actual degree of impact on the environment that the proposed development will have. This report was compiled by incorporating information provided by the applicant and the various project specific employees/directors and no warranty or guarantee, whether expressed or implied, is made by the EAP with respect to the completeness, accuracy or truth or any aspect of this document with reference to the instructions, information and data supplied by the aforementioned parties.

The impact assessment was conducted based on the EAP's knowledge and experience. The probability, intensity/severity and significance pertaining to the criteria used to assess the significance of the impacts were based on rule-of-thumb and experience.

It was assumed that, by and large in this particular landscape segment, with its relatively sparse vegetation, surface archaeological traces would be relatively visible. However it was likely that where artefacts are present, they would tend to occur in buried gravel deposits.

A proviso is routinely given, that should sites or features of significance be encountered during mining on the site (this could include an unmarked burial, an ostrich eggshell water flask cache, or a high density of stone tools, for instance), specified steps are necessary (beginning with immediate suspension of work, and reporting to the heritage authority).

The impact assessment was conducted based on the EAP's knowledge and experience. The probability, intensity/severity and significance pertaining to the criteria used to assess the significance of the impacts were based on rule-of-thumb and experience.

A potential limitation associated with the sampling approach is the narrow temporal window of sampling undertaken as part of the field work. Ideally, the site should be visited several times during different seasons to ensure that the full complement of plant and animal species present are observed, recorded and reported. However, this is rarely possible due to time and cost constraints. The information presented in this piece of work represents the dry/Winter season study. The present area of application presents an advantage for identification of plant species throughout the year because it along the Orange River and therefore is not as dry as the rest of the Northern Cape province. A full plant species list was compiled for the site from the site visit; this was complemented by a list of any listed species which are known from other studies to occur in the broad vicinity of the site. The lists of amphibians, reptiles and mammals for the site are based on those observed at the site as well as those likely to occur in the area based on their distribution and habitat preferences. This represents a sufficiently conservative and cautious approach that takes account of the study limitations;

The fieldwork undertaken was comprehensive. However, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within farm Katlani 236. This is the case because it is almost impossible to located all heritage resources that exist within an area of approximately 4 000 hectares. Various factors account for this, including the subterranean nature of some

archaeological sites and, in some instances the dense vegetation cover. Beneficial this study and results collected is the factor that fieldwork was conducted during the dry season. This improves the probability of identifying heritage resources on the ground. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted or SAHRA be informed. Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist had been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well; and in the foregoing discussion the long history of occupation of the region by Khoi, Nama, Tswana, Xhosa or San communities. In the event that any graves or burial places are located during the project the procedures and requirements pertaining to graves and burials will apply as set out in the recommendations made by specialists.

No comprehensive palaeontological study was ever conducted to cover the whole of South Africa. And, fossil databases are not updated regularly to present the accurate data that exists to date. Fossil data collected from different areas but in similar Assemblage Zones might however provide insight on the possible occurrence of fossils in an unexplored area. Desktop studies therefore usually assume the presence of unexposed fossil heritage within study areas of similar geological formations. In many instances, a Chance-Find Protocol is proposed.
In the present instance, based on the geology of the area and the palaeontological record as we know it, it can be assumed that the formation and layout of the dolomites, sandstones, shales and sands are typical for the country and may contain fossil plant, insect, invertebrate and vertebrate material. The sands of the Quaternary period would not preserve fossils.

The findings of the wetland and riparian assessments are based on the information collected during the site visit that was conducted during July 2019. Any changes within the project area that may affect the integrity and functionality of the delineated wetland post the site investigations have not been identified and therefore the results of such impacts on the wetlands have not been taken into consideration as part of this assessment;

The flowering times for wetland plant species are variable and species that were not flowering during the time of field investigations may have been overlooked, and; An etrex 10 handheld GPS unit that was used for wetland delineations and it is accurate to within five meters;

Due to the brief duration of the survey and the lack of seasonal coverage, the species list obtained during the site visit cannot be regarded as comprehensive. Ideally, a site should be visited several times during different seasons to ensure that the full complement of plant species present is captured. However, this is rarely possible due to time and cost constraints. The survey was nevertheless conducted in such a manner to ensure all representative communities are traversed and therefore is likely to have included the majority of the dominant and common species present.

Furthermore, the site visit for the study took place during late winter, which is not an optimal time of the year. Most grasses and annuals present were not flowering, and was therefore not in a favourable state for the assessment at the time of the site visit. The best time to evaluate vegetation in the study area is after at least some summer or late-summer rain when the vegetation has had a chance to respond and is in an actively growing state. The results presented here can therefore only reflect the condition of the vegetation.

In order to simplify the classification of vegetation communities, the transitional zones were not included in the community classification process. This is regarded as a limiting factor in

the accuracy of the mapping, classification and delineation of plant communities and therefore the fine-scale vegetation map. Although the communities presented here are more accurate than the current broad-scale vegetation map, they can still not be regarded as exact. Transitional areas were however not excluded from the surveys in order to maximise the chances of encountering species of conservation concern.

c. Reasoned opinion as to whether the proposed activity should or should not be authorised

i. Reasons why the activity should be authorized or not.

Mining is one of the most important economic activities in the Northern Cape. There are no significant reasons why the activity should not be authorized. However, if the proposed management and mitigation measures are not properly applied or if the mining operation intentionally disregards any of these measures, it will negatively affect the environment and have more long-term consequences. Therefore, the competent authority should take all the necessary steps to ensure that the mining operation complies with the conditions set out in the approval of the EMP.

ii. Conditions that must be included in the authorisation

Apart from ensuring that the necessary permits are obtained for restricted activities, all recommendations and mitigation measures as set out in the EMP should be adhered to or other reasonable mitigating measures should be implemented.

In the Ecologist's opinion, authorisation can be granted if the applicant commits to the adherence of effective avoidance, management, mitigation and rehabilitation measures.

Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the prospecting, drilling, trenching and excavations begin.

1. The following procedure is only required if fossils are seen on the surface and when excavations/mining commence.

2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone) should be put aside in a suitably protected place. This way the mining activities will not be interrupted.

3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones. This information will be built into the EMP’s training and awareness plan and procedures.

4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.

5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.

6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.

7. If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary.

8. If no fossils are found and the excavations have finished then no further monitoring is required.

The South African Heritage Resource Agency submitted the following comments:

The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final EIA and EMPr:

- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit and the Burial Grounds and Graves (BGG) Unit has no objections to the proposed development;
- 38(4)b – The recommendations provided by the heritage specialists are supported and must be adhered to. Further specific conditions are provided for the development as follows;
- A no-go bufferzone of 30 m must be adhered to around the following sites: structures (KAT12, KAT17 and KAT36), and engraved glacial pavements (KAT13 and KAT14);
- The 100 m no-go buffer zone around the graves is supported;
- A Heritage Management Plan (HMP) inclusive of a monitoring schedule and reporting procedure must be developed for the in-situ protection and management of heritage resources identified within the development area. This HMP must be developed prior to the commencement of prospecting activities and submitted to SAHRA for comment;
- 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)d – See section 51(1) of the NHRA;
- 38(4)e – The following conditions apply with regards to the appointment of specialists:
- i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The Final EIA and EMPr must be submitted to SAHRA for record purposes;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

d. Period for which the Environmental Authorisation is required.

Environmental Authorisation is required for 5 years.

e. Undertaking

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

The undertaking required to meet the requirements of this section is provided at the end of the EMP and is applicable to both the Basic Assessment Report and the Environmental Management Report.

f. Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

i. Explain how the aforesaid amount was derived.

The quantum of the financial provision contemplated in Regulation 54 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) will be revised and adjusted accordingly annually, based on a survey assessment of the environmental liability of Mazelsfontein Katlani CPA. Surveys of excavations are conducted by a registered surveyor and results are forwarded to the Environmental Manager who calculates the outstanding rehabilitation as per the agreed rate in the DMR Guideline. A bank guarantee is prepared for the amount and submitted to the DMR.

Financial provision for the rehabilitation or management of negative environmental impacts caused by the mining operation [as required by Section 41 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] will be made in the form of a financial guarantee from a South African registered bank. This document will guarantee the financial provision relating to the Environmental Management Programme in a format as approved by the Director-General.

ii. Confirm that this amount can be provided for from operating expenditure. (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

Mazelsfontein Katlani CPA does require external funding for purposes of conducting prospecting and mining activities.

g. Specific 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 an **Appendix** .

The prospecting process is going to have a positive impact as a minimum of 15 jobs are going to be created.

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).

There are some sites of archaeological and cultural interest of high significance that occur on or within close proximity to the mining area. Where and when level of significance of impacts before mitigation is high, the Department of Mineral Resources, SAHRA and heritage specialist will be notified. The specialists have proposed some mitigating measures for these finds.

h. **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)**.

There are no alternatives, as the application area applied for is the area identified with potential for a diamond mining operation.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Details of EAP

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is included in PART A, Section 3(a) herein as required.

2. Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is included in PART A, Section 3(d).

3. Composite Map

Refer to the figure below for a map that superimposes the proposed activity, its associated structures and infrastructures on the environmental sensitivities of the preferred site, also indicating any areas that should be avoided, including buffers. A more conclusive design will be presented herein after all specialist reports have been generated and considered accordingly.

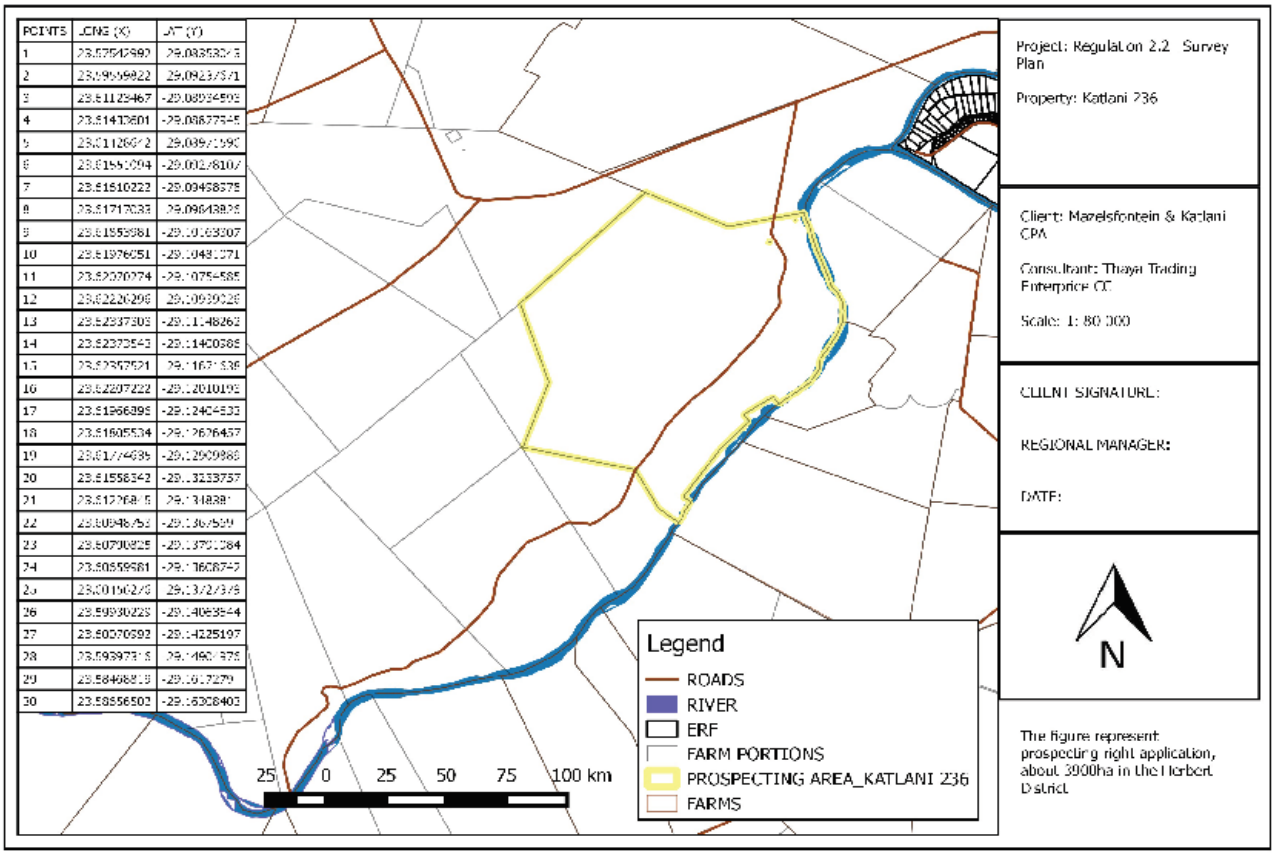


Figure 10a: A composite Map of the proposed prospecting activity.

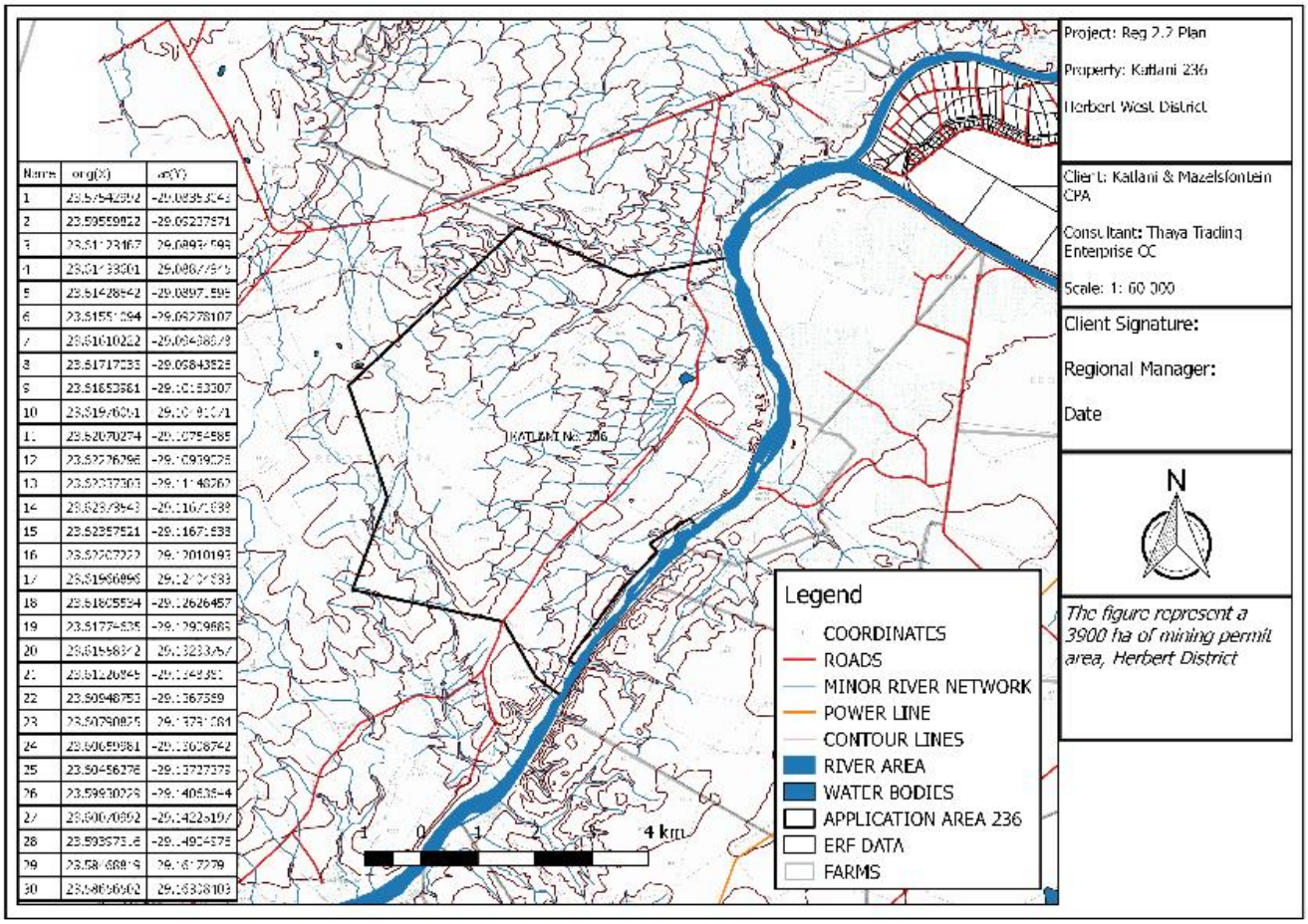


Figure 10b: A Composite Map of the proposed prospecting activity.

4. Description of Impact management objectives including management statements

4.1 Determination of closure objectives

The key aim of decommissioning and closure is to ensure that all the significant impacts are ameliorated. All rehabilitated areas should be left in stable, self-sustainable state. The closure objectives for the project were determined taking into account the existing type of environment as described in Section iv, in order to ensure that the closure objectives strive to achieve a condition approximating its natural state as far as reasonably practicable possible. Furthermore, the preliminary closure plan objectives and principles have been developed against the background of the proposed prospecting activity location in the Kimberley/Hebert region of the Northern Cape Province, and include the following:

- that environmental damage is minimised to the extent that it is acceptable to all parties involved;
- that at closure, the land will be rehabilitated to achieve an end use of wilderness and grazing;
- that all surface infrastructure will be removed from site after closure. Any open drills will be completely backfilled and the remaining waste rock dumps shaped accordingly;

- that contamination beyond the prospecting site by wind, surface run-off or groundwater movement will be prevented;
- that closure of prospecting area is achieved efficiently, cost effectively and in compliance with the law; and,
- that the social and economic impacts resulting from closure of prospecting area are managed in such a way that negative socio-economic impacts are minimised.

The closure target outcomes for the site are therefore assumed to be as follows:

- to achieve chemical, physical and biological stability for an indefinite, extended time period over all disturbed landscapes and residual prospecting infrastructure;
- to protect surrounding surface water, groundwater, soils and other natural resources from loss of current utility value or environmental functioning;
- to limit the rate of emissions to the atmosphere of particulate matter and salts to the extent that degradation of the surrounding areas' land capability or environmental functioning does not occur;
- to maximise visual 'harmony' with the surrounding landscape; and
- to create a final land use that has economic, environmental and social benefits for future generations that outweigh the long term aftercare costs associated with the mine.

Mazelsfontein Katlani CPA will be using a mobile camp site for its prospecting activities, and therefore no infrastructure associated with the camp site will require breaking down or demolishing at closure. The areas disturbed as a result of the prospecting operation will be rehabilitated by maintaining the general topography of the surrounding area, ensuring that there are no remnants of the structures. The closure objectives aim to return the affected area to a land use condition or desired state similar to that of the pre-mining state. Closure and rehabilitation of pits will be undertaken during the operational phase when the activities are completed in those pits, to achieve a desired land condition as early as possible. The pollution control dams (PCD) will be removed at closure and the plastic lining will be removed and recycled.

The associated environmental impact caused by the proposed development is relatively of low significance. Archaeological and hydrological sensitivity are the only activity that rate relatively higher - that is medium significance. The condition or state of vegetation has degraded already. This is a factor that that could be alluded to previous vegetation clearing activities and farming that occurred in and around the area of application. Be that as it may, the potential environmental impacts associated with the proposed development are the following:

- Disturbance of some heritage resources if proposed mitigation measures are not implemented;
- Topography and visual alteration;
- Noise generation or pollution;
- Air quality;
- Land capability;
- Ecology;
- Invasive alien plant species; and,
- Water sources.

An effective implementation of this environmental management plan and any other reasonable and acceptable prevention, reduction, or control and remedy of any impacts need to be ensured. This effective management of impacts will assist greatly to achieve "pain free" rehabilitation to an acceptable and self-sustainable state.

4.2 Acid Mine Drainage (AMD)

AMD is not a significant factor in these Prospecting Activities.

4.3 Volumes and rate of water use required for the mining, trenching or bulk sampling operation.

The operation would require about 3 600 m^3 litres per annum over the three year prospecting operation.

4.4 Has a water use license been applied for?

The water use license application is in progress.

5. Impact Management Actions (phases of development)

The EMP addresses the following three (3) phases:

5.1 CONSTRUCTION PHASE

Table below contains a list of potential environmental issues and the appropriate mitigation measures that may be associated with the construction phase of this proposed development. This section serves as a framework for the construction contractor even though Mazelsfontein Katlani CPA plans to utilise mostly mobile equipment and machinery for the prospecting phase of this project within which to execute his contractual duties. This detailed EMP may be included in the final contract(s) with the relevant construction contractors. The table only addresses those impacts that may occur on the site during the Construction and associated management measures that may require additional environmental management.

Table 14: Construction Phase

Issue	Mitigation	Responsible party	Frequency of Action
Topography			
Objective: To minimise topographic alterations			
General land disturbance	Manage through limiting all project-related activities to the proposed prospecting footprint area.	ESHQ Department	Continuous
Soils			
Objective: To minimise soil degradation			
Soil Erosion by Water	Manage through best practices. Construct and monitor soil conservation measures at stockpiled sites as well as during construction and road-building activities.	ECO/Contractor	When necessary
	Avoid bare, disturbed surfaces for long periods of time (e.g. re-vegetate stockpiled soils). Another option would be to backfill as quickly as reasonably practicable.	ECO/Contractor	On-going
	Avoid undue storm-water concentration (e.g. construct runoff measures according to soil conservation principles).	ECO/Contractor	When necessary
	The run-off from the exposed ground should be controlled with the careful placement of flow-retarding barriers.	ECO/Contractor	When necessary
	The soil that is excavated during	ECO/Contractor	On-going

	construction should be stock-piled in layers and protected by berms to prevent erosion.		
	The placement of the flow retarding barriers must occur in consultation with the Environmental Officer and as part of an overall storm water management system during the construction phase.	ECO/Contractor	On-going
	All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosive losses.	ECO/Contractor	On-going
	All attempts must be made to avoid exposure of dispersive soils.	ECO/Contractor	On-going
Soil Erosion by Wind	Avoid bare, disturbed surfaces (e.g. re-vegetate stockpiled soils). backfill as quickly as reasonably practicable.	ECO/Contractor	On-going
	Cover exposed soils with brush-packs of non-invasive species in order to minimise erosive losses.	ECO/Contractor	When necessary
	Construct windbreaks, where necessary.	ECO/Contractor	When necessary
Issue	**Mitigation**	**Responsible party**	**Frequency of Action**
Erosion by water and wind.	At no point may plant cover be removed outside of the proposed footprint area and beyond the prospecting authorised area.	Mine community; ESHQ Department	On-going
	The removal of plant material must be kept to a minimum.	ECO/Contractor	On-going
	Audits must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the cause of the erosion must be undertaken.	Mine community; Contractor	When necessary and/or during windy periods; after rain
	Rehabilitation of the erosion channels and gullies must take place.	ECO/Contractor	When necessary
	Re-establishment of indigenous plant cover on disturbed areas must take place as soon as possible once activities in that area have ceased.	ESHQ Department; Contractor	When necessary
Dustiness.	Limit traffic congestion and traffic speed to definite, set limits and existing paths.	ECO/Contractor	On-going
	Grade, seal and water road surfaces.	ESHQ Department	When necessary
	Re-vegetate and irrigate dust sources.	ECO/Contractor	When necessary
Chemical Soil pollution.	Manage through best practices. Personnel must be trained to be able to prevent or manage chemical and hydrocarbon spills.	ESHQ Department	When necessary
	Combat chemical pollution in order to	ECO/Contractor	On-going

	avoid toxic substances entering water sources, health and safety of human beings and that of the environment.		
	Spill kits absorbents and spill mats must be available on-site at all times in order to ensure rapid response following spill incidents.	ESHQ Department	On-going
	Personnel must be suitably trained in the use of spill kits and bioremediation equipment.	ESHQ Department	On-going
Soil microbiological degradation	Stockpile topsoils in heaps not exceeding two (2) m in height.	ECO/Contractor	On-going
Topsoil Degradation	Use only the A-horizon for topsoil purposes.	ECO/Contractor	On-going
	Handle topsoil only in the moist state to prevent wind erosion.	ECO/Contractor	On-going
	All possible efforts must be made by the contractors to strip topsoil to a maximum depth of 150 mm.	ECO/Contractor	On-going
	Topsoil stockpiles must be kept as small as possible in order to minimise compaction, wind erosion and the formation of anaerobic conditions.	ECO/Contractor	On-going
	Topsoil must be stockpiled for the shortest possible timeframes in order to ensure that the quality of the topsoil is not impaired.	ECO/Contractor	On-going
	Topsoil must not be handled when the moisture content exceeds 12 %.	ECO/Contractor	On-going
Topsoil Degradation	Topsoil stockpiles must be kept separate from subsoil.	ECO/Contractor	On-going
	Excavated and stockpiled soil material are to be stored and bermed on the higher lying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.	ECO/Contractor	On-going
	The topsoil should be replaced as soon as possible on any backfilled areas, thereby allowing for the regrowth of the seed bank contained within the topsoil.	ECO/Contractor	When necessary
	Cover exposed soils with brush-packs of non-invasive species in order to maximise nutrient cycling and minimise erosive losses.	ECO/Contractor	When necessary
	Stockpiles susceptible to wind erosion are to be covered during windy periods.	ECO/Contractor	When necessary
	Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.	ECO/Contractor	On-going
	Spill kits to clean up accidental spills from	ESHQ	On-going

	earthmoving machinery must be well-marked and available on site.	Department	
	Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.	ESHQ Department	On-going
Surface Water			
Objective: To mitigate negative impacts on the aquatic systems			
Sedimentation of water resources	Manage through best practices. To prevent erosion of material that is stockpiled for long periods, the material must be retained in a bermed area.	ECO/Contractor	On-going
	All topsoil must be removed and stockpiled on the site.	ECO/Contractor	On-going
	Stockpiles should not be higher than two (2) m to avoid compaction, and single handling is recommended.	ECO/Contractor	On-going
	Dust suppression is necessary for stockpiles older than a month – with either water or a Bio-degradable chemical binding agent.	ECO/Contractor	When necessary
Surface Water pollution	All construction areas should be suitably rehabilitated and re-vegetated as soon as possible after construction.	ECO/Contractor	When necessary
	Particles stockpiled on the tailings dam contain diamondiferous gravel and kimberlitic material, which can enter the surface water via runoff or wind drift transport, if the tailings dam is located close to the surface water. Implementation of the one hundred 100 m buffer zone along the river.	ESHQ Department	Once off
	Construction vehicles must be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.	ECO/Contractor	On-going
Surface Water pollution	A walled concrete platform, dedicated store with adequate flooring or bermed area should be used to accommodate chemicals such as fuel, oil, paint, herbicide and insecticides, as appropriate, in well-ventilated areas.	ESHQ Department	On-going
	Surface water draining off contaminated areas containing oil and petrol would need to be channelled towards a sump, which will separate these chemicals and oils.	ESHQ Department	On-going
	All Portable septic toilets must be provided and maintained for construction crews. Maintenance must include their removal without sewage spillage.	ESHQ Department	On-going
	Under no circumstances may ablutions occur outside of the provided facilities.	ECO/Contractor	On-going
	Trees must be planted over drainage plumes from the tailings dam in order to control the	ESHQ Department	On-going

	pollution of the water by nitrates, phosphates and sulphates.		
	Where possible and if necessary, an artificial wetland must be established immediately downstream of the tailings dam for the removal of heavy metals from water resources.	ESHQ Department	Once off
	If servicing and washing of the vehicles are to occur on site, there must be specific areas constructed for this activity. This areas needs to have a concrete foundation, bunded as well as have oil traps to contain any spillages likely to occur.	ESHQ Department	Once off
	Oil residue shall be treated with oil absorbent such as OBC, Bioremediation, GK-Spill kits or Drizit or similar and this material removed to an approved waste site. Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.	ECO/Contractor	On-going
Surface water pollution: Mixing of concrete	Concrete must be mixed on mixing trays or plastic liners. If mixing of concrete is to take place on exposed soil, this has to occur in demarcated areas that must be bunded. This is so that the cement is not washed away during heavy rainfall events.	ECO/Contractor	On-going
	Concrete and tar shall be mixed in specifically demarcated areas only.	ECO/Contractor	On-going
	All concrete and tar that is spilled outside these areas shall be promptly removed by the Contractor and disposed of at a registered landfill site.	ECO/Contractor	When necessary
	After all the concrete / tar mixing is complete all waste concrete / tar shall be removed from the batching area and disposed of at a registered landfill site.	ECO/Contractor	When necessary
Surface water pollution: Mixing of concrete	Storm water shall not be allowed to flow through the above-mentioned areas. Ensure that there are clean water separation systems preventing clean water from entering the affected areas and measure to contain any contaminated water occurring within the actual areas.	ECO/Contractor	On-going
	Cement and sediment shall be removed from time to time and disposed of in a manner as instructed by the Mine Manager.	ECO/Contractor	On-going
Surface water pollution: litter	In the case of pollution of any surface or groundwater, the Regional Representative of the DWS must be informed immediately.	ESHQ Department	When necessary
	Provide bins for construction workers and staff at appropriate locations, particularly	ESHQ Department	Once off

	where food is consumed.		
	The construction site should be cleaned daily and litter removed.	ECO/Contractor	Daily
Ground water			
Objective: To mitigate negative impacts on ground water systems			
Groundwater level impact - dewatering	Water level monitoring in boreholes located adjacent to the decline and near the surface mining area. The location of boreholes between the river and the mining operation in the corridor would assist with the identification of impacts the activities may have on the river.	ESHQ Department	Monthly
	A water balance for the operations should include a measurement of the water collected in the decline and the underground mine/s as a result of dewatering activities. This volume should be reconciled with the findings from the numerical groundwater model.	ESHQ Department	On-going
	Water volumes and the water balance should be compiled using actual flows. These flows should be measured using strategically placed, calibrated flow meters.	ESHQ Department	On-going
Groundwater quantity impact	Water level monitoring on the site and in neighbouring boreholes to determine water level changes and aquifer storage changes with time. These impacts are not likely to be directly related to a change in recharge, however, a result of dewatering and the removal of groundwater from the aquifers.	ESHQ Department	Monthly
Groundwater pollution of the neighbouring users water quality	Monitoring of water quality in neighbouring boreholes should be considered for background water quality identification. The frequency of sampling would be less than for the on-site monitoring boreholes. These boreholes are categorised as off-site boreholes.	ESHQ Department	Monthly
	Indigenous trees must be planted over drainage plumes from the tailings dam in order to control the pollution of the water by nitrates, phosphates and sulphates.	ESHQ Department	On-going
	Where possible, an artificial wetland must be established immediately downstream of the tailings dam for the removal of heavy metals from water resources.	ESHQ Department	Once off
Monitoring	A groundwater and surface water monitoring programme should be planned and implemented prior to the commencement of mining. Monitoring measures must be implemented as detailed.	ESHQ Department	Once off
	Monitoring boreholes should be established as soon as infrastructure design is	ESHQ Department	Once off

	completed and approved.		
	Monitoring boreholes should be identified constructed during mining right application process and sited according to DWS standards and guidelines.	ESHQ Department	Once off
	Additional site characterisation boreholes should be drilled around the mine site to determine the position of the aquifers over the whole site during mining right application process.	ESHQ Department; Geo-hydrologist	Once off
	The site characterisation boreholes with water strikes should be tested for aquifer parameters i.e. transmissivity and storativity,	ESHQ Department	Monthly
	Water level and quality monitoring should commence when the construction of the decline commences.	ESHQ Department	Monthly
Flora			
Objective: To mitigate the removal and/or disturbance to flora			
Loss of vegetation of high ecological importance	No development should take place within 100 metres Oange River.	ESHQ Department	On-going
	Where natural habitats must be transformed, consideration should be given to the quality of the habitat (based on the presence of microhabitats).	ESHQ Department	Once off
	The highest quality habitat should be conserved.	Ecologist; ESHQ Department	When necessary
	Minimise the footprint of transformation.	Ecologist; ESHQ Department	On-going
Loss of vegetation of medium ecological importance	The highest quality habitat must be conserved.	Ecologist; ESHQ Department	Once off
	Incorporate as much of the indigenous vegetation into the design layout as possible.	Ecologist; ESHQ Department	Once off
Loss of vegetation of medium ecological importance	After pegging of the site, the ecologist must return to site to provide the final consent regarding the location of the pegs.	Ecologist; ESHQ Department	Once off
	Where natural habitats must be transformed, consideration should be given to the quality of the habitat (based on the presence of microhabitats).	Ecologist; ESHQ Department	Once off
Loss of conservation important plant taxa.	Footprint areas of the proposed development must be scanned for Red Listed, protected and important plant species. No protected plant species were identified on the area.	Ecologist; ESHQ Department	Once off
Loss of trees due to water	Trees within the draw-down area must be monitored.	Ecologist; ESHQ Department	Annually

extraction.			
Fragmentation of Natural Habitat.	No development may take place within the 100 m of developmental zone along the Orange River.	ESHQ Department	On-going
	Retain natural corridors within the design layout as far as possible.	ESHQ Department	On-going
	Natural corridors must be retained where possible to promote movement of fauna, especially during the construction phase when a high rate of natural disruption is expected.	Ecologist; ESHQ Department	On-going
	All road networks must be planned with care to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type.	Ecologist; ESHQ Department	Once off
	The ecologist must advise the applicant regarding exact placement of measures such as fencing of nest sites on the final approved layout.	Ecologist; ESHQ Department	Once off
Floral disturbance in riparian zone.	No development within the 100 m of developmental zone.	ESHQ Department	On-going
	No vehicular movement within the 100 m of development zone.	ESHQ Department; Contractor	On-going
Vegetation clearance	Herbicides will not be used for vegetation clearance.	Contractor	On-going
	Plant species pre-inoculated with *mycorrhizae* must be planted on tailings in experimental plots as soon as possible to test species suitability for decommissioning.	ESHQ Department	On-going
Vegetation clearance	Stockpile all non-invasive woody vegetation removed for site establishment for brush packs to be used during rehabilitation.	ESHQ Department	On-going
	Cover exposed soils with brush-packs of non-invasive species in order to maximise nutrient cycling and floral re-establishment.	ESHQ Department	On-going
	Access roads must be kept to a minimum, and where possible existing tracks should be used	Contractor	On-going
Invasive species	All invasive species must be eradicated from the site and prevented from spreading.	ESHQ Department	On-going
	All landscaping must take place with indigenous species occurring in the area.	ESHQ Department	On-going
	All exposed areas must be covered with brush-packs of indigenous species as soon as possible following exposure in order to limit the opportunity for invader species establishment. These areas must be seeded with seeds of	ESHQ Department	On-going

	indigenous species collected on-site as described in the Planning phase.		
Fauna			
Objective: To mitigate disturbance of fauna			
Faunal displacement and loss of habitat	The 100 m no development zone around the Orange River must be avoided.	ESHQ Department	On-going
	Careful consideration is required when planning the placement for stockpiling construction material, topsoil and the creation of access routes in order to avoid the destruction of pristine habitats and minimise the overall development footprint.	ESHQ Department; Contractor	Once off
	Placement thereof should occur in areas of medium ecological importance only, and not areas of high ecological importance.	ESHQ Department; Contractor	Once off
	The appointment of a full-time Environmental Control Officer must render guidance to the contractors with respect to suitable areas for all construction-related disturbance.	ESHQ Department	Once off
Disturbance to fauna.	The extent of the proposed prospecting activities should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance), and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as "no-go" areas for employees, machinery or even visitors.	Contractor	On-going
	All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.	ESHQ Department; Contractor	On-going
	The Environmental Control Officer must ensure that all contractors and workers undergo Environmental Induction prior to commencing with work on site.	ESHQ Department	When necessary
	The environmental induction should occur in the appropriate languages for the workers who may require translation.	ESHQ Department	When necessary
	Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert, if practically feasible.	ECO/Contractor	When necessary
Disturbance of Raptor nests	Raptor nests located in large trees may be destroyed during the construction phase. It is therefore strongly advised, that all large trees within the development footprint be scanned for nests by suitable person. As should any nest be present, they can be relocated or chicks removed, should no	ESHQ Department	Once off

	other alternative be available.		
Mortality of invertebrates and other nocturnal species.	The lights used for illumination of the plant will attract many invertebrates and other nocturnal species. The light causes disorientation and often results in mortality. It is therefore recommended that the lights should not include any source that emits light in the white spectrum (e.g. mercury arc or halogen lamps). It is therefore recommended that all lights be fitted with sodium lights (yellow), if practicable.	ESHQ Department	Once off
Air Quality			
Objective: To mitigate negative impacts on ambient air quality			
Dust entrainment and concomitant PM10 emissions	Vegetation is to only be removed when soil stripping is required. These areas should be limited to include only those areas required for development, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.	ECO/Contractor	When necessary
	Brush packs on exposed soil will limit the amount of dust liberated from these exposed surfaces.	ECO/Contractor	When necessary
	Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression. (Usually, the options exist in scheduling this activity to coincide with periods when soil moisture can be expected to be optimal. However, in the current case, given the arid nature of the environment, it would be impractical to base topsoil removal activity schedule based on soil moisture considerations.)	ECO/Contractor	When necessary
Dust entrainment and concomitant PM10 emissions	Where it is logistically possible, control methods for unpaved roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression (or chemical suppression to reduce water requirements), avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.	ECO/Contractor	When necessary
	The length of time where open areas are exposed should be restricted. Construction of infrastructure should not be delayed after land has been cleared and topsoil removed.	ECO/Contractor	On-going
	Dust suppression methods must, where logistically possible, be implemented at all areas that may / are exposed for long periods of time.	ECO/Contractor	When necessary

	Blasting and drilling (if required) should be delayed under unfavourable windy and atmospheric conditions.	ESHQ Department	When necessary
	Where logistically feasible, seasonal meteorological conditions should be taken into consideration during construction activities (i.e. precipitation and wind field).	ESHQ Department	When necessary
	For all construction activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees.	ESHQ Department	On-going
Noise			
Objective: To minimise the disruption of ambient noise levels and/or increase in continuous noise levels			
The impact of the operations on ambient noise climate	Maintenance of equipment and operational procedures: Proper design and maintenance of silencers on diesel-powered equipment, systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.	ESHQ Department; Contractor	On-going
	Placement of material stockpiles: Where possible material stockpiles should be placed so as to protect the boundaries from noise from individual operations. If a levee is constructed, it should be of such a height as to effectively act as a noise barrier, if line of sight calculations show this to be practicable.	ECO/Contractor	When necessary
The impact of the operations on ambient noise climate	Equipment noise audits: Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.	ECO/Contractor	Monthly
	Environmental noise monitoring should be carried out regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.	ECO/Contractor	Monthly
Sites of Archaeological and Cultural Interest			
Objective: To protect and preserve all cultural and heritage resources located within the study area			
Destruction of heritage resources.	The mine prospecting can go ahead, mindful of the sites that have been flagged for protection. As a standard precaution archaeological deposits are usually buried underground. Should archaeological	ESHQ Department;	On-going

	artefacts or skeletal material be exposed in the area during prospecting operations, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place. The property owners were urged to protect the site KAT13 and KAT14 (please see Annexure D). Declaration of the sites to Grade II (Provincial) status may contribute to strengthening protection measures.		
	A 100 metre protection buffer must be kept around the graves during all phases of this proposed development and in the vicinity.	ESHQ Department;	Once off
	If fossils are found once mining has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.	ESHQ Department;	On-going
Disruption of sites with archaeological and/or cultural interest.	If any archaeological or palaeontological sites are exposed during construction work, operations should be halted and find(s) should immediately be reported to a museum or SAHRA, preferably one at which an archaeologist or palaeontologist is available, in order for further investigations to be conducted. Or a specialist be called in to give guidance on how to handle the heritage resource.	ECO/Contractor	On-going
Visual Aspects			
Objective: To minimise extensive scarring of the landscape			
Visual Impact	Locate construction camps and stockyards out of the visual field of highly sensitive visual receptors. Utilise the existing screening capacity of the site and provide an additional screen shade by enclosing the construction site and stockyards with dark green.	ESHQ Department	Once off
	Retain some of the existing vegetation cover of the site through selective clearing. Where practically feasible, protect existing vegetation clumps during the construction phase in order to facilitate screening during construction and operational phases.	ESHQ Department	On-going
	It is imperative that topsoil from the footprint of the prospecting infrastructure is stripped and stockpiled. Stockpile the topsoil from the construction site on the perimeter of the facility to firstly construct a visual barrier and secondly, to protect the topsoil and the seed bank	ECO/Contractor	On-going

	contained in it for future use in rehabilitation. The topsoil must not be stockpiled higher than two (2) m and must be vegetated directly after placement.		
	Pave roads where relatively high traffic volumes are expected, to minimise dust generation and the potential unsightly discoloration of vegetation along these roads.	ESHQ Department	On-going
	Keep the construction sites and camps neat, clean and organised in order to portray a general tidy appearance.	ECO/Contractor	On-going
	Remove rubble and other building rubbish off site as soon as possible or place it in a container in order to keep the construction site free from additional unsightly elements.	ECO/Contractor	Monthly
	Locate the construction camps and the material stockpiles outside of the visual field of sensitive visual receptors. It is proposed to locate the temporary facilities of the construction camp on one of the areas earmarked for a stockpile or slimes dam. This will reduce the footprint of disturbance over time and effectively reduce the associated landscape impact.	ESHQ Department	Once off
	If construction is necessary during night time, light sources shall be directed away from residential units and roads as to prevent obtrusive lighting.	ESHQ Department	On-going
	Dust suppression procedures should be implemented especially on windy days during earth works.	Contractor	When necessary
Socio-Economic Structure			
Objective: To avoid detrimental impacts on the communities			
Social Impact	It is recommended that a Community Liaison Forum (CLF) must be established for the surrounding communities. This committee would serve as a communication channel between the communities and the applicant. Members of the committee should include representatives from environmental groups, civil society, ward councillors, government departments (DEA, DTEC), District and Local Municipalities, construction teams and the applicant. Such a committee will play an important role in executing the proposed mitigation measures.	ESHQ Department	On-going
Social Impact	The CLF should ensure that the needs of all the different groups are addressed and that decisions are clearly communicated to the community at large.	ESHQ Department	On-going

	The CLF, if established, must meet on a monthly basis before and during the construction phase and on a bimonthly basis during the operational phase. If necessary, it can be replaced by the Future Forum as prescribed by the MPRDA, on the condition that the relevant parties remain members of the committee.	ESHQ Department	On-going
	Local people should, as far as possible, be utilised in the construction and operation of the project. This will maximise local economic development and the creation of employment in the area. This will also serve to minimise the risk of negative feelings and behaviour between locals and new comers, and lessen the need for developing temporary housing for construction workers. However, it is not anticipated that the mine could be staffed from local people only, and therefore it is very likely that a construction camp would be necessary. Using local labour would ensure a smaller camp.	ESHQ Department	On-going
	Recreational facilities should be established for labourers living in the construction camp, either in town or on site, to reduce the levels of mischief.	ESHQ Department	Once off
	The local community must not be exploited. If they are employed, they should receive proper contracts in accordance to the Labour Act.	ESHQ Department	Once off
	Provision must be made for public transport needs like drop off zones and bus stations. In addition a transport system should be devised on the basis of the existing transport infrastructure to provide the labourers with transportation to and from home. The transport costs of the labourers should be subsidised if the applicants do decide to fully rely on the current infrastructure. However, local entrepreneurs should preferably be consulted to provide the applicants with this service.	ESHQ Department	On-going
	It is advised that some effort be made to uplift the surrounding communities by either providing employment opportunities exclusively for these communities, or by providing bursaries and on the job training for those interested in studying an area relevant to mining.	ESHQ Department	On-going
Social Impact	Local materials should be used for construction as far as possible and	ESHQ Department	On-going

	sustainable.		
	The importance of the maintenance of the roads in the area should be emphasised to the relevant authorities. The applicant must also make some contribution to maintaining the main access roads and ensure that the construction phase will do as little damage to the road surface as possible.	Applicant	On-going
	During the construction phase it is advised that contactors, working on the site, must wear visible identification cards/uniforms and that the CLF must work with the police and the Community Police Forum to ensure that the community is aware of the newcomers in the area and they should devise a strategy on access, movement and transportation. It is imperative that the applicant must become part of the community police forum.	ESHQ Department	On-going
	Strict health and safety measures must be implemented during the construction and operation phases. These measures must be enforced, and if someone does not adhere to it a penalty system should be in place. The rules must be enforced on contractors and permanent employees.	ESHQ Department	On-going
	Construction vehicles must be scheduled to travel through towns during off-peak times.	ECO/Contractor	On-going
	The mine should ensure that all employees are adequately trained and qualified to perform their duties. Visitors must be familiarised with the safety precautions of the mine. This aspect will most likely be addressed by the Occupational Health and Safety officer employed by the mine.	ESHQ Department	On-going

5.2 OPERATIONAL PHASE

The table only addresses those impacts that may occur on the site during the Operational and associated management measures that may require additional environmental management.

Table 15: Operational Phase

Issue	Mitigation	Responsible Party	Frequency of Action
Geology			
Objective: To optimise the exploitation of the mineral resource.			
Loss of mineral resource.	Optimise prospecting activities and locate strategically the related infrastructure in order to access the mineral resource and recover it effectively.	ESHQ Department	On-going
Topography			
Objective: To minimise topographic alterations.			
General land disturbance.	Manage through best practices and limit all activities to the proposed prospecting footprint area.	ESHQ Department	When necessary
	The stockpiles and tailings dams will be located on the proposed prospecting footprint area.	Mine Authorities	Continuous
Soils			
Objective: To minimise soil degradation and ensure the implementation of effective rehabilitation measures.			
Soil erosion.	Avoid bare, disturbed surfaces for long periods (e.g. re-vegetate stockpiled soils) and undue storm-water concentration (e.g. construct runoff measures according to soil conservation principles).	ESHQ Department	On-going
Soil erosion by wind	Avoid bare, disturbed surfaces for prolonged period of time.	ESHQ Department	On-going
	Re-vegetate the disturbed area as soon as reasonably practicable. Cover exposed soils with brush packs at the earliest point following exposure.	ESHQ Department	When necessary
	Construct windbreaks if necessary.	ESHQ Department	When necessary
Erosion by water and wind	At no point may plant cover be removed outside of the development zone.	ESHQ Department	On-going
	The removal of plant material must be kept to a minimum.	ESHQ Department	On-going
	All plant material removed must be used for the establishment of brush	ESHQ Department	On-going

	packs.		
	Cover exposed soils with brush packs at the earliest point following exposure.	ESHQ Department	When necessary
	Audits must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the cause of the erosion must be undertaken.	ESHQ Department	As necessary during windy periods and after rain
	Rehabilitation of the erosion channels and gullies must take place.	ESHQ Department	When necessary
	Re-establishment of plant cover on disturbed areas must take place as soon as possible once activities in that area have ceased.	ESHQ Department	When necessary
Dustiness	Limit traffic congestion and speed to definite road zones and set threshold.	ESHQ Department	On-going
	Grade and water road surfaces.	ESHQ Department	On-going
	Re-vegetate and irrigate sources of dust.	ESHQ Department	When necessary
Chemical Soil pollution	Personnel must be trained to be able to prevent chemical and hydrocarbon spills.	ESHQ Department	On-going
	Combat chemical pollution in order to avoid toxic substances entering food chains.	ESHQ Department	On-going
Topsoil degradation.	Use only the A-horizon for topsoil purposes.	ESHQ Department	On-going
	Handle topsoil only when moist to prevent wind erosion but not when moisture exceeds 12 % in order to prevent destruction of soil structure.	ESHQ Department	On-going
Soil pollution through acid mine drainage	Ground exposure should be minimised in terms of the surface area and duration, wherever possible.	ESHQ Department	On-going
	The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.	ESHQ Department	On-going
	Audits of Mine Residue Deposits, including water return dams, waste rock dumps, tailings storage facilities must be carried out at regular intervals to ensure that best practices are being followed	ESHQ Department	Daily inspections, monthly audits.

	throughout the operations.		
	Water from mine dewatering must be used wherever possible within the process and not discharged directly into the environment.	ESHQ Department	On-going
Surface Water			
Objective: To minimise negative impacts on the aquatic systems			
Pollution of surface water - hydrocarbons	Hydrocarbon contamination of the soil by diesel and oil spillage during earthworks must be prevented. Biodegradation of contaminated soils and water sources should be carried out when necessary.	ESHQ Department	On-going
	Trucks should be inspected and in good working order. Following the detailed design of the prospecting program, appropriate measures should be implemented to ensure clean and dirty water separation and thereby mitigating the impact of pollution of the receiving Orange River System; A clear surface water monitoring plan should be developed prior to starting operations to protect the integrity of the receiving Orange River System.	ESHQ Department	On-going
Ground Water			
Objective: To minimise negative impacts on the groundwater systems			
Groundwater pollution – seepage from the slimes dam	The rates of seepage should be determined by means of geotechnical investigations and leachate tests on the tailings material to determine the composition of the possible seepage.	ESHQ Department	On-going
	Monitoring of seepage water quality in the toe drains by means of scheduled sampling for the constituents.	ESHQ Department	Monthly
	Monitoring boreholes down-gradient of slimes dam for water level and water quality. Sampling according to the sampling method and parameters for analysis.	ESHQ Department	Monthly
Groundwater pollution – seepage from the slimes dam	Monitoring of water quality in the penstock by means of sampling.	ESHQ Department	Monthly
	Monitoring of the success of establishment of suitable woodland species to control nitrates,	ESHQ Department	On-going at regular intervals

	phosphates and sulphates in the slimes dam plume		(e.g. six months)
	Monitoring of the success of establishment of suitable wetland species to control heavy metals below the slimes dam.	ESHQ Department	On-going at regular intervals (e.g. six months)
Groundwater pollution – impact on the background and neighbouring users water quality	Monitoring of water quality in neighbouring boreholes should be considered for background water quality identification. The frequency of sampling would be less than for the on-site monitoring boreholes. These boreholes are categorised as off-site boreholes. This may be minimal or negligible at prospecting phase, however, necessary at mining phase.	ESHQ Department	Monthly
Groundwater level impact - dewatering	Water level monitoring in boreholes sited next to the decline and near the area of operations. Borehole between the non-perennial stream and the operations in the migration corridor would assist in identifying any impacts the activities may have on the non-perennial stream.	ESHQ Department	Monthly
	A water balance for the operations should include a measurement of the water collected in the decline and the underground mine/s as a result of dewatering activities. This volume should be reconciled with the findings from the numerical groundwater model.	ESHQ Department	On-going
	Water volumes and the water balance should be compiled using actual flows. These flows should be measured using strategically placed, calibrated flow meters.	ESHQ Department	On-going
Groundwater quality impact	Water level monitoring on the site and in neighbouring boreholes must take place to determine water level changes and aquifer storage changes with time. These impacts are not likely to be directly related to a change in recharge, however, as a result of dewatering and the removal of groundwater from the aquifers. This may be necessary at mining phase.	ESHQ Department	Monthly
	Water from the dewatering process must be re-used.	ESHQ Department	Continuous

Monitoring	The site characterisation boreholes with water strikes should be tested for aquifer parameters i.e. transmissivity and storativity,	ESHQ Department	Monthly
Monitoring	The slimes and ore material should be tested with leachate testing. The analyses should include arsenic, selenium, hexavalent chromium tin and mercury.	ESHQ Department	Monthly
	Seepage tests should be conducted at the site of the proposed slimes dam.	ESHQ Department	Monthly
	The contaminant transport model should be updated with the leachate test results.	ESHQ Department	Monthly
Groundwater pollution – spillage of chemicals and hydrocarbons	All possible measures must be implemented to ensure that groundwater reserves are not polluted, including the following: Prevention of hydrocarbon spills: Correct storage of hydrocarbons underground and above-ground within concrete bunded areas; High standard of maintenance on vehicles to prevent hydrocarbon leaks; Refuelling to take place within a bunded area; High standard of maintenance on refuelling equipment; Availability of spill kits as well as training of personnel in the use thereof; and Implementation of measures to ensure rapid clean-up following spill events.	ESHQ Department	On-going
Flora			
Objective: To minimise the disturbance and/or removal of flora			
Establishment of invasive plant species.	Landscaping must be associated with indigenous species that occur naturally in the area.	ESHQ Department	On-going
	All landscaping must take place with indigenous species occurring in the area.	ESHQ Department	On-going
	All invasive species must be eradicated from the site and prevented from spreading	ESHQ Department	On-going
	All exposed areas must be covered with brush-packs of indigenous species as soon as possible following exposure. These areas must be seeded with seeds of indigenous species collected on-site as described in the Planning phase.	ESHQ Department	On-going

	These areas must also be watered to a limited degree with water from the dewatering (if fit for the purpose) in order to ensure that the indigenous species establish as soon as possible.		
Vegetation clearance.	Storm water management will be implemented to ensure that polluted and clean water will be separated and to reduce the velocity of the storm water.	ESHQ Department	On-going
	Access roads must be kept to a minimum, and where possible existing tracks must be used.	ESHQ Department	On-going
	Vehicles should remain only in the area to be disturbed by the road and other works at all times.	ESHQ Department	On-going
	Experiments using indigenous plant species pre-inoculated with *mycorrhizas* planted on tailings in experimental plots to test species suitability for decommissioning may be concucted.	ESHQ Department	On-going
	Herbicides must not be used for vegetation clearance.	ESHQ Department	On-going
Loss of trees due to water extraction.	Water must be piped in, which will prevent the depletion of groundwater reserves and the subsequent negative impact on groundwater.	ESHQ Department	On-going
Fragmentation of natural habitat	Natural corridors must be retained where possible to promote movement of fauna.	ESHQ Department	On-going
Floral disturbance in riparian zone.	No vehicle movement must take place within the buffer zone.	ESHQ Department	On-going
Fauna			
Objective: To prevent the disturbance to fauna as far as reasonably practicable			
Faunal displacement and loss of habitat.	All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.	ESHQ Department	On-going
	The Environmental Control Officer must ensure that all contractors and workers undergo Environmental Induction prior to commencing with work on site.	ESHQ Department	On-going
	The environmental induction should occur in the appropriate languages for the workers who may require translation.	ESHQ Department	When necessary
Air Quality			
Objective: To mitigate negative impacts on the ambient air quality			

Dust entrainment and concomitant PM10 emissions	The following mitigation measures, proposed for implementation by the applicant are acknowledged and supported: • Extraction of dust-laden air from raw materials handling area, final products handling area and the sorting pan.	Design Engineers; Applicant	On-going
	Further mitigation measures that are recommended for implementation are as follows: • Crushing operations, a significant source of particulate should be effectively controlled • The best technology for dust control in this context is by means of extraction hoods and ducting, followed by capture in a collector. Depending on further destinations of captured dust, the decision between wet or dry capture may be made. Dry capture methods include fabric filters and electrostatic precipitation. Wet scrubbing technologies range from the lower efficiency types (e.g. spray chambers) to high efficiency venture type scrubbers.	Design Engineers; Applicant	On-going
Dust entrainment and concomitant PM10 emissions.	The following abatement measures are listed to serve as a *guideline* in the mitigation of emissions. • Tailings impoundments – Dust mitigation measures that are logistically feasible given the nature of the environment must be identified and implemented. Typical temporary mitigation measures include wet and chemical suppression with more permanent measures comprising, wind sheltering, vegetation and rock cladding. • Unpaved road surfaces - The currently unpaved access road should preferably be paved or treated with a chemical surfactant if necessary. Alternatively, wet suppression could be used depending on the availability of water. Watering represents a commonly used, relatively inexpensive option, but only serves as a temporary form of dust control.	Design Engineers; Applicant; ESHQ Department	On-going

	Although biodegradable chemical treatment of the exposed surfaces is relatively expensive it provides for longer dust suppression. If a chemical is used it must be ensured that it is carefully administered and is not harmful to the receiving biophysical environment. • Surface Conveyor Belts - The proposed prospecting activities produce ore that would be transported via conveyor belt to the stockpile if necessary. Recommended mitigation measures for implementation are presented below.		
Dust entrainment and Ongoing concomitant PM10 emissions.	Cover all exposed soils with suitable brush packs.	ESHQ Department	When necessary
Dust arising from conveyor usage.	Install sprays at transfer points to wet dust and particles and prevent liberation thereof.	ESHQ Department	When necessary
	Install side wind guards.	ESHQ Department	Once off
	Place covers on high and/or steep parts of the conveyor (where applicable).	ESHQ Department	On-going
	Ensure belt is clean.	ESHQ Department	Once off
	Install dust collection systems, if necessary, (these systems are used to capture, transport and separate dust that has been emitted. Dust collection provides a cost effective means of controlling respirable dust emission while wet sprays are effective in suppressing visible dust).	ESHQ Department	On-going
	Enclosure maintenance.	ESHQ Department	On-going
Noise			
Objective: To minimise the disruption of ambient noise levels and/or increase in continuous noise levels			
The impact of the operations on ambient noise climate	Maintenance of equipment and operational procedures: Proper design and maintenance of silencers on diesel-powered equipment if necessary, systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.	ESHQ Department	On-going

	Placement of material stockpiles: Where possible material stockpiles should be placed so as to protect the boundaries from noise from individual operations. If a levee is constructed, it should be of such a height as to effectively act as a noise barrier, if line of sight calculations show this to be practicable.	ESHQ Department	When necessary
	Equipment noise audits: Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.	ESHQ Department	Monthly
	Environmental noise monitoring should be carried out at regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.	ESHQ Department	Monthly
Sites of Archaeological and Cultural Interest			
Objective: To protect and preserve all cultural and heritage resources located within the study area			
Disruption of sites with palaeontological/archaeological and/or cultural interest.	The mine prospecting can go ahead, mindful of the sites that have been flagged for protection. As a standard precaution archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during prospecting operations, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place. The property owners were urged to protect the site KM13 and KM 14 (please see Annexure D). Declaration of the sites to Grade II (Provincial) status may contribute to strengthening protection measures. No development must take place	ESHQ Department	On-going

	within 100 metres of the graves in order to prevent disturbance to heritage resources or sites. If fossils are found once mining has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample and follow the proposed Chance Find Protocol.		
Visual Aspects			
Target: To avoid extensive scarring of the landscape			
Visual impact	Maintain the site and facility to a high aesthetic level by regularly replacing broken windows, painting blighted facades and maintain the landscape around the facility healthy and neat.	ESHQ Department	On-going
	If practically feasible, keep the tailings stockpile and slimes dam to a maximum height equal or lower than the prevailing vegetation cover, i.e. five (5) m or lower. Alternatively, implement progressive rehabilitation on the side slopes of the tailings stockpile and slimes dam to reduce the exposed surface of contrasting material.	ESHQ Department	On-going
	Avoid the installation of lights on the perimeter of the site in order to limit/eliminate obtrusive lighting and the potential disturbance of adjacent landowners and users.	ESHQ Department	On-going
	Refrain from installing permanent lighting where light is required intermittently. Lighting can be switched on manually or through an automatic time switch, synchronised with the times light is required.	ESHQ Department	On-going
Socio-Economic			
Objective: To avoid detrimental impacts on the communities			
Social impacts	The CLF, if established, must meet on a monthly basis before and during the construction phase and a bimonthly base during the operational phase. If necessary, it can be replaced by the Future Forum as prescribed by the MPRDA, on the condition that the relevant parties remain	ESHQ Department	On-going

	members of the committee.		
	Local people should, as far as possible, be utilised in the operation of the project. This will maximise local economic development and the creation of employment in the area. This will also serve to minimise the risk of negative feelings and behaviour between locals and new comers.	Applicant	On-going
	Provision must be made for public transport needs like drop off zones and bus stations. In addition a transport system should be devised on the basis of the existing transport infrastructure to provide the labourers with transportation to the site and back home. The transport costs of the labourers should be subsidised if the applicants do decide to fully rely on the current infrastructure. However, local entrepreneurs should preferably be consulted to provide the applicants with this service.	Applicant	On-going
	It is advised that some effort be made to uplift the surrounding communities by either providing employment opportunities exclusively for these communities, or by providing bursaries and on the job training for those interested in studying an area relevant to mining.	Applicant	On-going
	Strict health and safety measures must be put in place during the operation phases. These measures must be enforced, and if someone does not adhere to it a penalty system should be in place. The rules must be enforced on contractors and permanent employees.	ESHQ Department	On-going
	The community must be educated about the possible health impacts of these operations. This can be done via the distribution of information pamphlets and lectures from the occupational health professionals in the community. The mine must ensure to have monitoring equipment in place to ensure that records of levels of chemicals, dust and noise are measured before the	ESHQ Department	On-going

	commencement of the project. This will ensure that a scientific baseline is in place.		
	The mine should ensure that all employees are adequately trained and qualified to perform their duties. Visitors must be familiarised with the safety precautions of the mine. This aspect will most likely be addressed by the Occupational Health and Safety officer employed by the mine authorities.	ESHQ Department	On-going

5.3 Decommissioning Phase

Most of mitigation that is proposed to be undertaken during decommissioning phase is applicable though all phases (Construction, Operational and Decommissioning Phases) of this proposed development. To decommission operations and rehabilitate the environment

Table 16**:** Decommissioning Phase

Issue	**Mitigation**	**Responsible Party**	**Frequency of Action**
Fauna and flora	• Limit vegetation clearance to only the area where activities are to take place. • Restore the disturbed area to a state where possibly animals will become attracted post closure.	ESHQ Department	On-going
Water Pollution	• Apply water-saving techniques such as re-use of the resource. • Implement pollution control	ESHQ Department	On-going

	measures.		
Soil Erosion	• Limit stockpile slopes angle to minimal threshold angle in accordance to the height of the slope.	ESHQ Department	On-going
Dust Emission	• Manage emissions of dust through dust suppression.	ESHQ Department	On-going
Waste	• Waste must be stored in demarcated temporary storage facilities and be disposed of in accordance with applicable pieces of legislation and best practise guidelines. • Some waste may be used to backfill excavated areas.	ESHQ Department	On-going
Infrastructure	• All mobile machinery will be removed from site. • Manage activity footprint as much as reasonable practicably possible. • Monitoring to	ESHQ Department	On-going

	be conducted a reasonably practicable possible long enough period post closure, i.e. 1 - 2 years		

5.4 Financial Provision

5.4.1 Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The preliminary closure plan objectives and principles have been developed against the background of the mine location in the Kimberley/Herbert region of the Northern Cape Province, and include the following:

- that environmental damage is minimised to the extent that it is acceptable to all parties involved;
- that at closure, the land will be rehabilitated to achieve an end use of wilderness and grazing;
- that all surface infrastructure will be removed from site after closure. The open pit will be completely backfilled and the remaining waste rock dumps shaped accordingly;
- that contamination beyond the mine site by wind, surface run-off or groundwater movement will be prevented;
- that closure prospecting operations is achieved efficiently, cost effectively and in compliance with the law; and,
- that the social and economic impacts resulting from closure of operations are managed in such a way that negative socio-economic impacts are minimised.

The closure target outcomes for the site are therefore assumed to be as follows:

- to achieve chemical, physical and biological stability for an indefinite, extended time period over all disturbed landscapes and residual mining infrastructure;
- to protect surrounding surface water, groundwater, soils and other natural resources from loss of current utility value or environmental functioning;
- to limit the rate of emissions to the atmosphere of particulate matter and salts to the extent that degradation of the surrounding areas' land capability or environmental functioning does not occur;
- to maximise visual 'harmony' with the surrounding landscape; and

- to create a final land use that has economic, environmental and social benefits for future generations that outweigh the long term aftercare costs associated with the mine.

5.4.2 Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

The consultation process with interested and affected parties (neighbouring farmers and land owners) will be completed. Regular contact sessions will be held with neighbouring farmers and land owners which are currently affected by the prospecting operations. Records will be kept of the complaints and the mitigation measures will be implemented. An advert in the DFA (Diamond Fields Advertiser) will also be placed in order for other interested parties to come forward and register as interested parties in the project.

5.4.3 Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

Infrastructure Areas

On completion of the prospecting operations, the various surfaces, including the access road, the office area, storage areas and the screening plant site should finally be rehabilitated as follows:

- All remaining material on the surface should be removed to the original topsoil level. This material should then be backfilled into the depressions. Any compacted area should be ripped to a depth of 300 mm, where possible, the topsoil or growth medium returned and landscaped.
- All infrastructures, equipment, screening plant, and other items used during the operational period should be removed from site.
- On completion of operations, all buildings, structures or objects on the office site should be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002.

Topsoil and Stockpile Deposits

Disposal Facilities: Waste material of all description inclusive of receptacles, scrap, rubble and tyres should be removed entirely from the prospecting area and disposed of at a recognized landfill facility. It should be permitted to be buried or burned on the site.

On-going Seepage, Control of Rain Water: It is not foreseen that any monitoring of ground or surface water should take place after mine closure, except if so requested by the DWS – Northern Cape.

Long-Term Stability and Safety: It should be the objective of mine management to ensure the long term stability of all rehabilitated areas including the backfilled depressions. This should be done by the monitoring of all areas until a closure certificate has been issued.

Final rehabilitation in respect of erosion and dust control: Self-sustaining vegetation will result in the control of erosion and dust and no further rehabilitation is deemed necessary, unless vegetation growth is not returned to a desirable state by the time of mine closure.

Final Rehabilitation Roads

After rehabilitation has been completed, all roads should be ripped or ploughed, fertilized and seeded, providing the landowner does not want them to remain that way and with written approval from the Director: Mineral Development of the Department of Mineral Resources.

Submission of Information

Reports on rehabilitation and monitoring should be submitted annually to the Department of Mineral Resources – Northern Cape, as described in Regulation 55.

Maintenance (Aftercare)

Maintenance after closure should include the regular inspection and monitoring and/or completion of the re-vegetation programme.

The aim of the Environmental Management Programme is for rehabilitation to be stable and self-sufficient, so that the least possible aftercare is required.

The aim with the closure of the mine should be to create and acceptable post-mine environment and land-use. Therefore all agreed commitments should be implemented by Mine Management.

After-effects Following Closure

Long Term Impact on Ground Water: No after effect on the groundwater yield or quality is expected.

Long Term Stability of Rehabilitated Land: One of the main aims of any rehabilitated ground should be to obtain a self-sustaining and stable end result. The concurrent cleaning of all tailings material and replacement of topsoil where available should be ensured.

5.4.4 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The ultimate rehabilitation of the prospecting site that involves the sloping, levelling, replacement of topsoil and the seeding of an grass seed mix in areas that does not recover acceptably as agreed to by the land owner will ensure that the site could be regarded as safe for humans and animals and will also ensure that the site is stable from an erosion point of view and also ensuring that the site could be used for grazing again.

The removal of waste material of any description from the prospecting area and the disposal thereof at a recognised landfill facility is going to be facilitated.

- The removal of infrastructure, equipment, plant and other items from the site;
- The ripping of compacted areas to a level of 300 mm and the levelling of such areas in order to re-establish a growth medium for plants (such areas will furthermore be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to the prospecting operation, if the re-establishment of vegetation is unacceptably slow.

The backfilling of the final excavations with subsoil and the covering thereof with previously stored topsoil (where-after this area will also be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to the proposed operation, and seedlings protected for a period of one) if the re-establishment of vegetation is unacceptably slow.

5.4.5 Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

Financial Quantum Provision has been determined to be as follows:

CALCULATION OF THE QUANTUM

Applicant: **Mazelsfontein Katalani Communal Property Association** **Ref No.:** **12343PR**
Evaluators: **Date:** **Aug-19**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3		12,21	1	1	0
2 (A)	Demolition of steel buildings and structures	m2		170,13	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2		250,72	1	1	0
3	Rehabilitation of access roads	m2		30,44	1	1	0
4 (A)	Demolition and rehabilitation of electrified railway lines	m		295,49	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m		161,18	1	1	0
5	Demolition of housing and/or administration facilities	m2		340,26	1	1	0
6	**Opencast rehabilitation including final voids and ramps**	**ha**	**0,3**	**173174,97**	**2**	**1**	**103904,982**
7	Sealing of shafts adits and inclines	m3		91,33	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha		118912,29	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha		148103,1	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		430161,62	1	1	0
9	Rehabilitation of subsided areas	ha		99571,13	1	1	0
10	General surface rehabilitation	ha	0,1	94198,59	1	1	9419,859
11	River diversions	ha		94198,59	1	1	0
12	Fencing	m		107,45	1	1	0
13	Water management	ha		35816,95	1	1	0
14	2 to 3 years of maintenance and aftercare	ha		12535,93	1	1	0
15 (A)	Specialist study	Sum				1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		113324,841
1	Preliminary and General		13598,98092		weighting factor 2 1		13598,98092
2	Contingencies		11332,4841				11332,4841
					Subtotal 2		138256,31
					VAT (15%)		20738,45
					Grand Total		**158995**

5.4.6 Confirm that the financial provision will be provided as determined.

It is hereby confirmed that financial provisions will be submitted with bank guarantees to the Department of Mineral Resources.

5.5 Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

- Monitoring of Impact Management Actions;
- Monitoring and reporting frequency;
- Responsible persons;
- Time period for implementing impact management actions; and,
- Mechanism for monitoring compliance.

Table 17: Monitoring measures

SOURCE ACTIVITY	**IMPACTS REQUIRING MONITORING PROGRAMMES**	**FUNCTIONAL REQUIREMENTS FOR MONITORING**	**ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)**	**MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS**
All Prospecting Activities	N/A	Ensure that the prospecting programme is being implemented in line with the approved prospecting works programme	Geologist	Submit an annual prospecting progress report to DMR
	All commitments contained in the EIA Report and accompanying EMP	Ensure commitments made within the approved EIA and EMP are being adhered to.	ESHQ Department	Undertake and submit an environmental performance audit every two years to DMR
Drilling/Trenching Activities	Cultural Heritage Resources	Monitor groundwater quality and level Monitor protection of areas of heritage and cultural significance.	Appointed drilling/excavation service provider/contractor	Weekly inspection and reporting

Drilling/Trenching Activities	Noise Dust fall Visual Soil & Vegetation Soil, Surface Water & Groundwater Social Housekeeping & maintenance Waste management Rehabilitation	within 500m from a drill site or trenches (If any). Weekly inspections will cover the following: - Implementation of effective waste management - Establish and implement a stakeholder compliant register on site and ensure that all complaints are responded to promptly. - Ensure that an oil spill kit is readily available. - Ensure that all chemicals and hydrocarbons are stored within bundwalls - Ensure that the fire brake is maintained. - Rehabilitation of drill pads and trenches - Records of water intersections on borehole logs - Control and minimise the development of new access tracks - Appropriate storage and handling of topsoil. Ensure that monitoring is implemented to cover all prospecting activity areas. Sites should be	Appointed drilling service provider/contractor	Weekly inspection and reporting

		located up and downstream of the site. Analytical suites for water quality analysis recommended Site walkovers to determine the condition of facilities and identify any leaks or overflows, blockages, overflows and system malfunctions for immediate remedial action Measure rainfall for water balance updates where possible		
Post Drilling or Excavation	Groundwater Re-vegetation Stability Soil erosion Alien invasive species	Monitor the external boreholes within 500m from drill post drilling (if any) or excavations. The Drill site shall be monitored six monthly until closure certificate is obtained.	ESHQ Department	Monitoring report

A Chance Find Protocol should be added to the EMPr. Based on this information it is recommended that the geologist or responsible person overseeing the prospecting activities looks out for fossils and report their occurrence.

Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the prospecting, drilling, trenching and excavations begin.

1. The following procedure is only required if fossils are seen on the surface and when excavations/mining commence.

2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone) should be put aside in a suitably protected place. This way the mining activities will not be interrupted.

3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones (for example see Figure 4, 5). This information will be built into the EMP's training and awareness plan and procedures.

4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.

5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.

6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.

7. If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary.

8. If no fossils are found and the excavations have finished then no further monitoring is required.

5.5.1 Indicate the frequency of the submission of the performance assessment/environmental audit report

An environmental audit should be conducted annually and submitted to the DMR annually. The environmental manager will conduct internal management audits against the commitments in the EMPr in accordance with an annual audit plan. In the operational phase, these audits will be conducted on a quarterly basis. The audit findings will be documented for both record keeping purposes and for informing continual improvement.

5.6 Environmental Awareness Plan

5.6.1 Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

Environmental conditions will be included in any operational contracts, thereby making contractors aware of the potential environmental risks associated with the project and the necessity to prevent impacts by implementing the proposed mitigation measures. The following principles will apply to the Environmental Awareness Plan (Safety, Health and Environment):

- All personnel will as a minimum undergo general SHE induction and awareness training.
- The Environmental Control Officer(s) or the responsible personnel from the SHEQ Department will identify the Safely, Health and Environment (SHE) training requirements for all personnel and contractors. The training requirements will be recorded in a training need matrix indicating particular training that must be undertaken by identified personnel and contractors. The training matrix will be administrated by the SHEQ Department.
- Development of a training programme:

➢ General Awareness training. The SHEQ manager will be responsible for adopting and customising the existing SHE induction and awareness training being undertaken at SIOM. It should include a general environmental awareness training module that will need to be integrated into the induction programme. The training manual shall include a review of the Environmental Policy, a review of significant environmental aspects, a description of the EMP and the importance of compliance to its requirements, general responsibilities of personnel with regard to the EMP and a review of the emergency and corrective action procedures.

- Specific environmental training:

➢ Specific environmental training will be in line with the requirements identified in the training matrix;
➢ People whose work tasks can impact on the environment will be made aware of the requirements of appropriate procedures/ work instructions. The SHE Representative will

communicate training requirements to responsible supervisors to ensure that personnel and contractors are trained accordingly.

- Training evaluation and re-training:

- Effectiveness of the environmental training will be reflected by the degree of non-conformance to EMPr requirements, the results of internal audits and the general performance achieved.
- Incidents and non-conformances raised against the EMPr will be assessed by the ESHQ manager and SHE Representative (s) determine the cause. Should it be evident that retraining is required the SHE Representative (s) will take the appropriate actions.

The Environmental topics to be covered in awareness training should include the following:

RESOURCE MANAGEMENT

- a. The importance of saving water
- i. South Africa is a water scarce country and rivers are polluted
- ii. Do not throw litter into river or water drains
- iii. Do not dispose of oils in sewers
- b. Air pollution - Climate change
- i. The use of fossil fuels is increasing the amount of greenhouse gases that are discharged to the atmosphere. Share transport or use public transport.
- ii. Don’t burn any rubbish, the smoke pollutes the air
- iii. Plant trees, they clean the air, provide us with oxygen and
- remove the greenhouse gas carbon dioxide from the air.
- c. Soil conservation
- i. Prevent overgrazing of farmlands, keep vegetation on the surface of the land to prevent soil erosion
- ii. Plant trees

HAZARDOUS SUBSTANCE USE AND STORAGE

- a. Solvent, petrol, diesel, insecticides, chlorine, detergents, chemical fertilisers are harmful to the environment and to your health. Use them sparingly and do not let them get into the water systems. Containers must be disposed of to a licensed hazardous waste disposal facility.
- b. Hazardous substances must be stored and used correctly.
- c. Ensure that 16-point Material Substances Safety Data Sheets (MSDS) are available at point of store.
- d. Compressed gas storage requirements.
- e. Flammable substances store requirements.

INCIDENT AND EMERGENCY REPORTING

- a. The company must have an emergency/incident reporting system whereby environmental incidents can be reported and actioned to mitigate and follow up on.

OIL / DIESEL / PETROL SPILL CLEAN UP

- a. All employees who work with machines and vehicles must be instructed how to prevent and clean up an oil or diesel spill appropriately. Spill kits must be available on site, drip trays must be used when servicing vehicles.

CONSERVATION OF WATER

- a. Campaign to save water on site.
- b. Clean water is expensive and potable water must be used carefully.
- c. Prevent pollution of water by preventing spills and dispose of wastes properly.

CONSERVATION OF VEGETATION

- Plants, grasses and trees are very important to our existence on the earth, they provide food, fuel, shelter, raw materials and they clean the air. Indigenous plants are especially important for *muti* and the whole ecology of life. Human activities are destroying the natural forests of

the earth. The natural forests are the “lungs” of the planet and unfortunately they are being cleared faster than they can be regenerated.

- a. EIA’s are to be done before virgin bush can be cleared.
- b. Vegetation cover reduces water and topsoil loss from the ground, do not clear vegetation unnecessarily.
- c. Indigenous trees provide shade, attract wild birds.
- d. Do not chop down indigenous trees without good reason.
- e. Implement a tree planting programme.
- f. Remove alien invasive trees in the area such Prosopis, Syringa and Pepper trees, cactus plants.

WASTE MANAGEMENT

- a. Employees must be instructed on how to tell the difference between hazardous waste and general waste.
- b. They must know how to separate hazardous and general waste and where to dispose of these wastes in the correct way.
- c. Examples of hazardous waste which must be recycled or sent to companies such as Enviroserv or Waste Tech for disposal:
- i. Oil, diesel, batteries, acids, paint, thinners, electronic waste.
- ii. Pesticides, Jik and Handy Andy.
- iii. Old oil, old oil filters, old paint is hazardous and must not be disposed of to a general land fill. Oilkol of the Rose Foundation will collect old oil.
- iv. Mercury in fluorescent light bulbs is hazardous, fluorescent lights must be handled with great care so as not to break the glass and release the mercury vapour into the air to breath.
- d. Examples of general wastes which can go to the municipal landfill.
- i. Wood, paper, plastic, glass, old PPE.
- e. Recycle, Reuse, Reduce, and Recover wherever possible.

5.6.2 Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Mazelsfontein Katlani Communal Property Association will develop and implement an Environmental Management System (EMS) that complies with the requirements of ISO14001:2004 Environmental Management Systems and is certified by the South African Bureau of Standards. Surveillance audits are conducted annually and recertification audits every third year. The mine's EMS addresses the following elements of the ISO14001 standard and these, in conjunction with the environmental commitments, ensure that potential environmental impacts arising from the mine's activities are managed appropriately:

- An environmental policy that includes commitments to prevent pollution, comply with applicable legal requirements and provides a framework for setting environmental objectives and targets;

- A register of environmental aspects and impacts with a view to implementing operational control measures to limit environmental impacts;
- A register of all applicable legal requirements to ensure legal compliance;
- A register of environmental objectives and targets that is consistent with the environmental policy and takes into account significant environmental impact and the management thereof, together with a program for achieving the identified objectives and targets;
- Resources to ensure implementation of the EMS;
- An environmental training and awareness program to ensure that persons performing tasks that could cause significant environmental impacts are aware of such impacts and are competent to perform such tasks;
- A communication procedure for internal and external communication in respect of significant environmental aspects;
- All Environmental Management System Documentation, as required by the ISO14001 standard, which includes control procedures for documents and records;
- Operational control procedures for activities that could cause significant environmental impact to ensure that correct procedures are implemented to;
- minimise potential environmental impacts;

- An emergency preparedness and response procedure that identifies potential emergency situations and potential accidents that can impact on the environment to ensure that such situations are dealt with in an appropriate manner;
- An environmental monitoring and measurement program to monitor and measure the key characteristics of the operation that can cause significant environmental impact and to gauge the success of implemented mitigation measures;
- A procedure for periodically evaluating compliance with applicable legal requirements;
- A procedure for dealing with non-conformities in terms of their identification, corrective action and preventative action;
- Audit programs and procedures that makes provision for internal and external audits focussing on implementation of the requirements of the EMS and legal requirements;
- Management reviews undertaken at planned intervals to ensure the system's continuing suitability, adequacy and effectiveness; and,
- Within the context of the principles listed above, the long term sustainability objectives of the Mine are:

  - To avoid impacts by effective planning in order to prevent and limit possible impacts;
  - To minimize impacts by implementing decisions or activities that are designed to reduce the undesirable impact on the bio-physical and socio-economic aspects detailed in the previous sections; and,
  - Rectifying impacts by rehabilitating or restoring, where applicable, the affected environment. This will include attempts at habitat re-creation, and restoring the land to the natural pre-mining land uses or to a pre-determine and approved land use

The mine's EMS will be applied to the project.

5.6.3 Specific information required by the Competent Authority

Section 41 of the MPRDA and regulations 53 and 54 promulgated in terms of the MPRDA deal with financial provision for mine rehabilitation and closure.

The holder of a right as described in the relevant sections of the MPRDA and its regulations must provide the Department of Mineral Resources (DMR) with sufficient financial provision. Officials in the DMR Regional Offices are required to assess, review and approve the quantum of financial provision submitted (that is, the monetary value of the financial provision that has been

computed by the holder of a prospecting right, mining right or mining permit during the annual review) as being sufficient to cover the environmental liability at that time and for closure of the mine at that time.

The holder of a prospecting right, mining right or mining permit is required to annually assess the total quantum of environmental liability for the mining operation and ensure that financial provision are sufficient to cover the current liability (in the event of premature closure) as well as the end-of-mine liability.

It is hereby confirmed that the financial provision will be reviewed annually.

2) UNDERTAKING

The 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) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein. ☐

Signature of the environmental assessment practitioner:

Thaya Trading Enterprise CC

Name of company:

Date:

-END-

ANNEXURE A
CURRICULUM VITAE OF ENVIRONMENTAL ASSESSMENT PRACTITIONER

SA

Zandile Dwane

610 Antoon Benning

Willie Hofmeyer Street

Bellville, 7535

Drivers Licence: Code B

32
YEARSOLD

Nationality: South African

I am a highly motivated, self-disciplined person and driven in achieving my biggest goals in life. I am a skilful communicator and strive to spread positivity. I am flexible, quick to pick up new skills and eager to learn from others. I am a fast learner and looking forward to face new challenges.

PERSONAL SKILLS

- CREATIVE
- INOVATIVE
- EXCELLENT INTERPERSONAL SKILLS
- QUICK THINKER
- PROBLEM SOLVING
- EFFECTIVE COMMUNICATOR
- ANALYTICAL
- GOOD TIME MANAGEMENT

+ 27 83 265 7992

kamvisto@gmail.com

References are available on request

OBJECTIVES

To work in an industry with a professional work driven environment where I can utilize and apply my knowledge. To make use of my expertise, this will sharpen my ability to work well for growth, individually and/or in a team with people of diverse backgrounds and different cultures. Use my technical and interpersonal skills for working in a team and successfully completing projects.

EDUCATION

Masters Degree- Petroleum Geology - University of the Western Cape
12- 12- 2016
BSc Honours Degree – Applied Geology - University of the Western Cape
17-03- 2014
BSc Undergraduate Degree – Applied Geology – University of the Western Cape

CUM LAUDE

22-03-2013

Grade 12: Batandwa Ndondo S.S.S (2003)

SPECIAL ACHIEVEMENTS

>Nominated among the best top 5 students who completed the Reservoir Engineering training courses with Total Professors with a Distinction in 2015.

>Completed Cum Laude graduation in March 2013

>Nominated for the International Scholar Laureate 2012 by Golden Key

>Certificate by golden key for the best academic performance in 2011

>Nominated among the best top 15% academic performances in 2010

PROFESSIONAL AFFILIATIONS

Geological Society of South Africa	(GSSA)
South African Council for Natural Scientific Professions	(SACNASP)
American Association of Petroleum Geologists	(AAPG)

CONFERENCES ATTENDED

Investing in African Mining Indaba	(2018)
Investing in African Mining Indaba	(2017)
23rd Africa Oil Week held at the Cape Town International Convention Centre	(2016)
22nd Africa Oil Week held at the Cape Town International Convention Centre	(2015)

WORK EXPERIENCE

Zandile Dwane is an Environmental Consultant specializing in Environmental Impact Assessments (EIA) and Water Use Licence Applications (WULA) for mining projects. Her duties include; correspondence with clients, specialists and DWS; attending project meetings; compiling WULA submission documents, training staff; and providing assistance on general environmental-related queries. Whilst working at Thaya trading Enterprice, Zandile has done some environmental consulting projects for Nyezi Holdings (Pty) Ltd (Environmental Authorozation granted by DMR), Basic Assessment report (BAR) for Khayalethu Mlobeli (Mining Permit was granted by DMR), BAR for Simonsus Developments (Pty) Ltd, BAR for Palesa Mulaudzi and Environmental Authorization application for Tawana Investment Holdings (Pty) Ltd.

15-02-2016 to date

Institution: THAYA TRADING ENTERPRISE CC

Position Held: Environmental Consultant

Roles and responsibilities:

- Assist with research for a variety of environmental related projects
- Assists with EIA application, WULA and maintenance report writing for clients
- Assists with proposal preparation and costing

- Provide support on GIS projects, particularly relating to capturing and verification of data into the municipalities GIS.
- Applied GIS and remote sensing
- Waste management and solid waste management
- Land and Mine Rehabilitation
- Water Sampling
- Preservation and Quality Monitoring

01-04-2014 to 23-12-2014

Institution: ERM (Environmental Resource Management)

Position Held: Researcher

Roles and responsibilities included, but not limited, to the following:

Interpretation of geological structures
Soil and Groundwater sampling
Soilbore Logging
Conduct geological Mapping,
Capturer geological data on the system and create maps
Geological, geochemical and geophysical interpretation and modelling
Writing reports and doing presentations
Continuously updating geological data and conducting subsurface mapping
Create Site Drawing / Plan (Generating 2D and 3D drawings)
Supervising Installation of monitoring wells (Drilling).

Skills Developed: Report-writing and presentation skills, research skills, team working skills
Planning and organizing skills.
Strong oral and written communication Skills
Coaching skills
Commitment to safe work practice
Ability to work to deadlines and under pressure
Creativity and Lateral thinking skills
Analytical and Problem Solving skills
Financial management skills
Attention to details and the ability to record information accurately
Leadership and performance management skills

Technical Competencies: IT skills to process data and produce 3-D models of geophysical features,
Identifying geological formations and rock types

Interpretation of geological models
Groundwater Assessment
Environmental Impact Assessment
Environmental Rehabilitation
Environmental Regulations and Acts

SYSTEM KILLS

Microsoft Office ®
Remote Sensing ENVI ®
MODFLOW®
GEOVIA Surpac ®
MINEX ®
Sharepoint®
Petrel ® (3D Seismic Modelling and Interpretation)
Downhole Explorer ®
Microstation®
VULCAN GeoModeller (Maptek) ®
Surfer ®
ArcGIS ®
Strater 5 ®
S3Graf ®

ANNEXURE B
ENLARGED MAPS

ANNEXURE C
PUBLIC PARTICIPATION RECORDS

WELCOME AND INTRODUCTION

Mr Kwindla Nobaza opened, welcomed and thanked everyone for attending the meeting. He then requested on of the attendees to translate from English to Afrikaans and vice versa. Fortunately, two people availed themselves for that service.

Purpose of the Meeting

Kwindla Nobaza explained that the purpose of the meeting was to consult stakeholders about the proposed prospecting/mining project as well as the scoping process that is currently underway. The public meetings were to consult stakeholders of the identified key issues, to provide stakeholders the opportunity to raise additional issues or concerns, among others, that have not been identified in the Scoping Report (SR).

Presentation on the Project Description

The consultant presented on the following:

- Project background and description
- Environmental Process overview
- Existing status quo (environmental)
- Potential environmental impacts
- Proposed public participation process
- Questions – Question session, General Comments and Queries
- Closure

Questions for clarity on Project Description

Issue Raised	By whom	Answer/Response
In order to simplify the process, anybody who has information about when the ore or resource could be found should assist at the beginning of prospecting activities.	Willem Gous	The design of infrastructure will be simplified and more effective if that happens so as to limit cost and time.
During prospecting phase, don't you come with experts to locate the area that is rich in diamonds?	Emmanuel Kock	We may bring in experts (consultants). However, that is an expensive exercise.
When the specialist or consultant comes, we may take them to the farm to show them where the resource is based on indigenous knowledge and as shown by elders.	Nels Hendrik	That move is welcome.

Follow the right procedures and bring in geologists.	Lucas Kock	That too is welcome. It is an important factor to consider.
Do you bring in machinery?	Emmanuel Kock	No, the community pays for machinery and to bring in specialists.
How deep are you going to dig?	Nels Hendrik	We may revise the depth to suit your needs.

CLOSURE

Mr Kwindla Nobaza extended a word of gratitude to everybody present and closed the meeting. He requested that the community gives the same support to specialists when they visit site to undertake fieldwork.


PUBLIC CONSULTATION MEETING
DATE : 18 July 2019
TIME : 17H00 (5 pm)
VENUE : MAIN ENTERNCE GATE OF FARM
KATLANI 236 DOUGLAS
MAZELSFONTEIN KATLANI COMMUNAL PROPERTY ASSOCIATION
ACCEPTENCE OF PROSPECTING RIGHT
Email: info@thayatrading.co.za

Project: KATLANI 236

Date: 25 JUNE 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: AGRICULTURE BOARDROOM - DOUGLAS.

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Alida Simon			[signature]	0834189615	7 Fuschia laan 444 Douglas
Henky Willemse			[signature]	0733305726	5506 Gastfontein Douglas
Amore Van Wyk			A. Van Wyk	0844993080	Kanalaan 496
Theonique Williams			T. Williams	062 324 0649	492 Kanalaan
Elrico Stewards			E. Stewards	0748278739	495 Kanalaan
Rosida Visser			R. Visser	082 0422394	495 Kanalaan
Atlanta Kock	kockatlanta@gmail.com	—	[signature]	0611367227	Bongani

Project: KATLANI236 **Date:** 25 JUNE 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: AGRICULTURAL BOARDROOM – DOUGLAS

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	E-mail Address	Designation/Interest	Signature	Contact Number	Residential Address
T September			[signature]	0653425116	665 Blaokomlaan
E. September			Elisa	0653425116	"
Nathan Riet			[signature]	0837490799	459 Fuchialaan
N. Hendricks			NEELS	0843722251	605 bloekomlaan
Willem Gous	-	Farm Manager	[signature]	0846098384.	437 Fuchia laan Douglas.
Anna Rooibaadjie			A Rooibaadjie	0826800794	269 Klipbok str.
Peter Kock			[signature]	051/2[illegible]/041	Sautboskaan 559 Dgls.
Rosita Julies			Julies		Ellendale. 359 Gelded

Thaya Trading Enterprise

Project: KATLANI 236 **Date:** 25 JUNE 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: AGRICULTURE BOARDROOM - DOUGLAS

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Emonuel Kok		Beneficiary	[signature]	0735835345	359 Lupin Str
L. Koch			[signature]	0838551600	2118 Tiloop
J. NERO	neromary6@gmail.com	(Vcc Chairperson)	[signature]	0827193932	50 Hobson Street Kby
A. Du Plooy		BENEFICARY	[signature]	0847638831	2110 Aasvoel str
A. Waterboer		M/K member	[signature]	0764525948	386 Gemsbok str
S. Kate.		S. Kate.		0736758467	188 Vuilerange.
A. DANIELS	aarondaniels332@gmail.com	BENEFICARY	[signature]	0825703525	Roosstr. 669 Douglas
W. WILLIAMS	willywilliamssantos@gmail.com	CHAIR PERSON	[signature]	0739367724	265 Bloemstr. Griekwastad 8365

Project: KATLANI 236

Date: 25 JUNE 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: AGRICULTURE. BOARDROOM - DOUGLAS

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
MANDY VISSER	mandyvisser2010@gmail.com	VICE-SECRETARY	MVisser	0670780638	DOUGLAS
RIKA TALJES		BENEFICIARY	R Taljes	0742309960	DOUGLAS
MIETA VISSER		BENEFICIARY			DOUGLAS
Ragel Jaftha.		BENEFICIARY	R Jaftha.	076 9555064	Douglas.
Angeline CHABALALA		BENEFICIARY	AChabalala	0725349358	DOUGLAS
Elsie V. Tandeki		BENEFICIARY	E.V Tandeki	0603522526	Douglas
Martha Kock		BENEFICIARY			DOUGLAS
WILLEM VISSER			W. Visser	0723062396	Douglas

Thaya Trading Enterprise

Project: KATLANI 236 **Date:** 25 JUNE 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: AGRICULTURE BOARDROOM – DOUGLAS

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
TROOI BROUWERS			Brouers	0788528718	136 Cypress str.
Mieta Visser			X	0788528718	146 Cypress str.
A Afrikaner			[signature]	0744121905	Breipaal
Dora Abrahams			[signature]	0608239998	Midblock
LEON ABRAHAMS			[signature]	0608239998	Midblock
Elsa Sereber.			[signature]		
Donovan Gous			[signature]	0844301683	Fuchia laan 437
NAOMI VISSER			[signature]	074 639 9931	470 FUCHIA AVENUE

R31-80

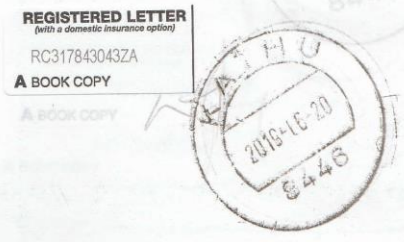
SANRAL
Private Bag X 19
BELVITE
7535

R 31-80

DEPT. OF RURAL DEV. & LAND REFORM
PRIVATE BAG X2458
KIMBERLEY
8300

R31-80

SOUTH AFRICAN HERITAGE RESOURCES AGENCY
HEAD OFFICE
111 HARRINGTON STREET
8001



R31-80

DEPT. OF PUBLIC WORKS
PRIVATE BAG X5002
KIMBERLEY
8300

R31-80

ESKOM
P.O.BOX 606
KIMBERLEY
8300

REGISTERED LETTER
(with a domestic insurance option)
ShareCall 0860 111 502 www.sapo.co.za
RC317843012ZA
CUSTOMER COPY 301028R

KATHU
2019-06-20
8446

R31-80

TRANSNET
P.O.BOX 1389
BLOEMFONTEIN
9300

REGISTERED LETTER
(with a domestic insurance option)
RC317843009ZA
A BOOK COPY

KATHU
2019-06-20
8446

R31-80

DEPT OF WATER & SANITATION
PRIVATE BAG X 6101
KIMBERLEY
8300

REGISTERED LETTER
(with a domestic insurance option)
RC317842992ZA
A BOOK COPY

KATHU
2019-06-20
8446

20/06/19

R31-80

SOL PLAATJIE MUNICIPALITY
PRIVATE BAG X 5030
KIMBERLEY
8301

REGISTERED LETTER
(with a domestic insurance option)
RC317842961ZA
A BOOK COPY

KATHU
2019-06-20
8446

R31-80

DEPT OF ENVIRONMENTAL AFFAIRS
PRIVATE BAG X6102
KIMBERLEY
8300

REGISTERED LETTER
(with a domestic insurance option)
RC317842944ZA
A BOOK COPY

KATHU
2019-10-20
8446

R31-80

SIYANCUMA MUNICIPALITY
P.O.BOX 27
DOUGLAS
8730

REGISTERED LETTER
(with a domestic insurance option)
RC317842935ZA
A BOOK COPY

KATHU
2019-10-20
8446

R31-80

DEPT. OOF AGRICULTUR
PRIVATE BAG X5018
KIMBERLEY
8300

REGISTERED LETTER
(with a domestic insurance option)
RC317843057ZA
A BOOK COPY

KATHU
2019-10-21
8446

20/06/19

31,80

MR VERNON MOSTERT
P.O.BOX 110025
MADISON PARK, KIMBERLEY
8306

REGISTERED LETTER
(with a domestic insurance option)
RC317843065ZA
A BOOK COPY

KATHU
2019-10-21
8446

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

DEPT. OF ENVIRONMENTAL AFFAIRS
PRIVATE BAG X6102
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

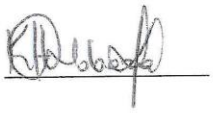
In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,



THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

DEPT. OF PUBLIC WORKS
PRIVATE BAG X5002
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

DEPT. OF WATER & SANITATION
PRIVATE BAG X6101
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

DEPT. OF AGRICULTURE
PRIVATE BAG X5018
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

DEPT. OF RURAL DEVELOPMENT & LAND REFORM
PRIVATE BAG X2458
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

ESKOM
P.O. BOX 606
KIMBERLEY
8300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

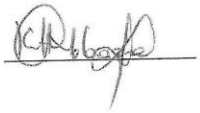
In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,



THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

SOUTH AFRICAN HERITAGE RESOURCES AGENCY (SAHRA)
HEAD OFFICE
111 HARRINGTON STREET
CAPE TOWN
8001

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

SANRAL
PRIVATE BAG X19
BELLVILLE
7535

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

SIYANCUMA MUNICIPALITY
P.O. BOX 27
DOUGLAS
8730

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

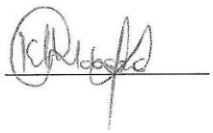
In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,



THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

SOL PLAATJE MUNICIPALITY
PRIVATE BAG X5030
KIMBERLEY
8301

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

TRANSNET
P.O. BOX 1389
BLOEMFONTEIN
9300

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

Yours sincerely,

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

June 18, 2019

MR VERNON MOSTERT
P.O. BOX 110025
HADISON PARK
KIMBERLEY
8306

Notice is hereby given in terms of Section 16(4) and Regulation 3 of the Mineral & Petroleum Resources, Development Act, 2002, (Act No. 28 of 2002) of intent to carry out the following activity:

Activity:

- Prospecting activities for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite in the form of a desktop study, percussion drilling, core drilling and bulk sampling.

Place: Katlani 236 in the Kimberley District.

Applicant: Mazelsfontein Katlani Communal Property Association

Mazelsfontein Katlani Communal Property Association has applied for a Prospecting Right for Diamond, Diamond General, Diamond Alluvial and Diamond in Kimberlite on the above mentioned property, situated in the Kimberley District, Northern Cape Province. This application for prospecting Right has been accepted in terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002).

In terms of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002), any Interested and Affected Parties must be notified and consulted with regard to proposed prospecting project.

You are hereby notified of the intent to prospect on the above mentioned property.

THAYA TRADING ENTERPRISE
EERSTE LAAN
ROOISAND, KATHU, 8446
TEL: + 27 71 959 9207
FAX: +27 86 522 1335
EMAIL: khnobaza@gmail.com

We invite you to make any comments or raise any concerns you wish in writing to the above mentioned address on or before **July 18, 2019.**

Yours sincerely,

THAYA TRADING ENTERPRISE

DRAFT SCOPING REPORT FOR THE DEVELOPMENT OF THE PROPOSED DIAMOND MINE

This is to confirm that I,

MARTHA MESHA LEKHOATHI

In my capacity as a representative of

KIMBERLEY LIBRARY

have received the following documents:

PLEASE TICK RELEVANT BOX

a) Hardcopy of Draft Scoping Report for Prospecting Right application of Mazelsfontein Katlani Communal Property Association	✓
b) Hardcopy of Draft Environmental Impact Assessment Report for Prospecting Right application of Mazelsfontein Katlani Communal Property Association	

Signature: [signature]

Date: 31/05/19

Stamp:

KIMBERLEY
[illegible]
2019 -05- 31
KIMBERLEY
[illegible]

THAYA TRADING ENTERPRISE

DRAFT SCOPING REPORT FOR THE DEVELOPMENT OF THE PROPOSED DIAMOND MINE

This is to confirm that I,

Angelo Bromkamp (Senior Librarian)

In my capacity as a representative of

DOUGLAS LIBRARY

have received the following documents:

PLEASE TICK RELEVANT BOX

a) Hardcopy of Draft Scoping Report for Prospecting Right application of Mazelsfontein Katlani Communal Property Association	
b) Hardcopy of Draft Environmental Impact Assessment Report for Prospecting Right application of Mazelsfontein Katlani Communal Property Association	

Signature:

Date: 04 June 2019

Stamp: DOUGLAS BIBLIOTEEK

Thaya Trading Enterprise

Project: Katlani 236 **Date:** 18 July 2019

Consultants:

Venue: Douglas Samaria Pinkster, Church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
CLAUDINE V. NEL			[signature]	0746381108	413 LANG STR.
KERNEELS VISSER			[signature]	0624573393	586 AKKER LN
KATRINA SPEAKE			[signature]	0634561727	412 LANG. STR.
FRANSISCA. VISSER			[signature]	0740198073	414 LANG. STR.
BRUZAAN GAUS			[signature]	[illegible]	965 Sutherlaan
Patrick [illegible]			[signature]		[illegible] laan
NATHAN RIET			[signature]	0837490799	439 Fuchia Avenue
ASHLEY VISSER			[signature]	0633904167	424 Lupin Str.

Project: Katlani 236 **Date:** 18 July 2019

Consultants:

Venue: Douglas Samaria Pinkster Church.

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Adam Du Plooy	adamduplooy1968@gm			0847633831	Agavoel str 216
Liza Kock	—		L. Kock	0847633831	Lana Str 16
Mina Nero	— — —		M Nero	0643317092	Akker Laan 1650
Margaret Williamson	— —		M Williamson		1184 Kaardaam
Riena Tallies	— — — —	— — —	R. Tallies	0714309560	K Talies
HG Duplooy	gisaacs233@gmail.com	—	Duplooy	0627364776	Mzwake 909
Mieke Saal				0840682496	Dysie Str 205
A Waterboer	— — —	— —	[signature]	0764585948	836 Gambakt

Project: Katlani 236 **Date:** 18 July 2019

Consultants:

Venue: Douglas Samaria Pinkster Church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
A CHABALALA		Beneficiary.	Achabalala	0725399358	Fusetha 4338. Douglas.
Lizel			L. Visser	0620551224	201 Middelpost plottes
Benita			B. Visser	0719770781	146 Cypresstraat. Douglas
Trooi			[illegible]	0788528718	136 Cypressstr.
Rasida			R. Visser	0719770781	146 Cypresstr.
LENA VISSER			L. Visser	0656188050	Weslaan 10
Sanna Visser			S. Visser	0656188050	Weslaan 30
Theoline Visser			T. Visser	0612583185	Cypenstraat

Project: Kablani 236

Date: 18 July 2019

Consultants:

Venue: Douglas Samaria Church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	E-mail Address	Designation/Interest	Signature	Contact Number	Residential Address
Ricardo Gouws			R. Gouws	0747360222	544 Gousblom Str.
Adam Visser			A. Visser	0718101771	Lupinstr 344
Izak. Williams			[signature]	5609085059080	365 Lupinestr
Beatrice Willemse			Willemse	0835592352	10 Westbank Plakkers
Shadrack Lawrence	[illegible]@gmail.com	Beneficiary	[signature]	073 430 9042	242 Sebolai St Bongani, Douglas
Marshalein Matthée	Missmatthee3d@gmail.com		[signature]	0783529839	Lupin str 354
Willie Williams	williamssantos@gmail	Chairperson	[signature]	0739367724	2458 Vygie str. C-1570 8365
Atlanta Kock	kockatlanta@gmail.com	–	[signature]	0611367227	2410 Clifpoint Ext Bongani Douglas.

Project: Katlani 236 **Date:** 15 July 2019

Consultants:

Venue: Douglas Samaria Pinkster church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Willem Baatman	oudamista@gmail.com	Treasurer		0745944162	Campbell
Niels Hendricks		Comm. member	NEELS		Douglas
MANDY VISSER	mandyvisser2015@gmail.com	VICE-SECRETARY	VISSER	0670780636	DOUGLAS
Rosita Jullies		Secretary	Jullies	065 1927034	GRIEKWESTAD
Anna Robiboorjie		Additional Member		082 68 00 794	GRIEKWESTAD
HENRY WILLEMSE		Assistance/Member		0733303726.	550 GROOTBOOM DOUGLAS.
Caroline v Wyk		Member		0793115562	Douglas.
Pieter Kock		Member		0712541041	Douglas

Thuso Trading Enterprise

Project: Katlani 236 **Date:** 18 July 2019

Consultants:

Venue: Douglas Samaria Pinkster Church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
FRANS VISSER		BEGUNSTIGDE	[signature]	0762262911	472 FOUCHE AVE BREIPAAL
RUDOLPH KOCK	kockrudolph@gmail.com	"	[signature]	0735231558	1 WESLAAN PACKER BREIPAAL.
WILLEM VISSER		"	W.Visser	0723062396	414 LANG STR BREIPAAL
Zelna Willemse			[signature]	0613121359	354 Lupin Street Breipaal
HENRY KALANSE		"	[signature]	0734048386	215 [illegible] Block BREIPAAL DOUGLAS
ELIJAH KALAMIE	—	"	[signature]	067 138 1540	524 TIEROUGSTR, RAINBOW VALLEY, G/STAD, 8365.
DANIEL HUGO		"	[signature]	060 4076797	4DELAAN 300 Grpl.
Kleintjie Bloukop	-	"		066 1281281	Douglas

Project: Katkani 236 **Date:** 18 July 2019

Consultants:

Venue: Douglas Samaria Pinkster, Church

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Atlanta B. Eccl	eccleatbrita@gmail.com	—	[signature]	0611367227	270 Olifant Str Bongani Longko
Johannes Nero	neromary@gmail.com	(Vice Chairperson).	[signature]	0827193932	30 Hobson Str.
W. Williams	willywilliamsantos@gmail.com	Chairperson	[signature]	0789367774	265 Bloemstr. Griekwastad 8365

Project: KATLANI 236 **Date:** 18 July 2019

Consultants: THAYA TRADING ENTERPRISE

Venue: Douglas Samaria Pinkster Church.

ATTENDANCE REGISTER PUBLIC PARTICIPATION					
Full Name	**E-mail Address**	**Designation/Interest**	**Signature**	**Contact Number**	**Residential Address**
Willem Gous	437 Fuchia-laan Douglas	Farm-Manager.	Gous	0846098384	437 Fuchia laan Douglas
Lona Korasie	- - -	Gemeentskap-lid	L. Ko Rasie	076-4333478	398 Cypress Str. Douglas
Frans	Pear-Street	Gemeentskaplid	F. Nero		Magtfontein Place
Pieter	Cypress Str.	Gemeentskaplid		-	Magtfontein Place.
Cherizone Willemse			C. Willemse	0842777108	56 Gardenia
PAST. RODERICK HOFFMAN	hoffman@gindiva.com	PRO - GEMEENTE		0730967035	270 CYPRESS BREEPARK

Furnished Rooms To Let

WOONSTELLE TE HUUR

• CASSANDRA

Gemeubeleerde 1 slaapkamer, water en elektrisiteit ingesluit, onderdak parkering. Veilige area.

R3 600 / R4 500 pm

Kontak Lynette op 082-459-7666

DFA Workplace

Education & Training

ROODEPAN HOëR SKOOL

Bogenoemde skool benodig 'n gekwalifiseerde leerkrag Departementeel

PROFIEL SIEN SOOS VOLG UIT:

Vakature: Gr. 10 – 12 – LIFE SCIENCES / LEWENSWETENSKAPPE

Medium: Afrikaans en Engels

TYDPERK: 09 Julie 2019 – 10 Oktober 2019

Handig of epos asseblief volledige CV en alle nodige dokumentasie o.a SACE, SARS ens. in by bogenoemde skool so gou moontlik.

Kontak: Mnr.R.L. Fredericks / Mnr.G.K Ferris
Tel: 0873105249 / 0839871981 / 0824155855

E-pos: roodepanhigh@gmail.com

Sluitingsdatum: 24 Junie 2019

Security

Security company requires

ARMED REACTION OFFICERS

for shift work

Must be PSIRA Registered, have sober habits and a clean driver's license. Traceable references are also absolutely essential. **Security Grade C as well as Shotgun competency.**

Please apply in writing with your CV and copy of certificates and driver's license to:

Top Security Systems, 37 Angel Street, New Park, Kimberley, 8301

PetraDiamonds

FINSCH DIAMOND MINE

Finsch Diamond Mine
Expression of Interest

Finsch Diamond Mine is located in the town of Lime Acres which is situated 160 km north west of Kimberley and 106 km south of Kuruman in the Northern Cape.

EXPRESSION OF INTEREST

Finsch Diamond Mine (Pty) Ltd is currently embarking on an initiative to source an accredited service provider within the Northern Cape who can render the services suited to an accredited Enterprise and Supplier Development (ESD) Programme – Reference number FDM-TEN-1012-19. To this end parties with the relevant experience are invited to submit an Expression of Interest indicating Enterprise and Supplier Development initiatives and details (references) of successfully implemented programmes.

The initiatives should address the following aspects:

1. **Enterprise Development Programme**
2. **Supplier Development Programme**
3. **Youth Entrepreneurial programme**
4. **Mentorship and training**

Criteria for qualifying service providers:

- **Minimum requirement of 51% black ownership; at least 51% black women owned and / or youth owned companies will get preference.**
- **Service providers are required to include in their Expression of Interest any technical (accredited) partners.**

Interested parties should please include a comprehensive company profile with references and contact numbers and submit to Liezel.Thys@petradiamonds.com.

The initiatives mentioned above are a collective and not individual.

Parties that meet the criteria as set above shall then be invited to submit proposals.

Due date for submission is noon on Friday 21 June 2019

For more information contact Liezel Thys (Technical) or Enzo Pantier (Commercial) on (053) 204-8843 or (053) 205-4703 respectively.

Classifieds Service Guide

Service Guide

Building Material

BOUSAND
R260 m³
R360 m³
Afgelewer in Kimberley
BTW ingesluit
Kontak
079-872-9079

BRICK SPECIALS
- Maxi bricks R3,50
- Blocks R8,50
- Building sand R280
- River / plaster sand R300
- Stone R350
- Crusher dust R350

Tel (053) 831-8889
Delivery included

Cleaning Services

Rose Carpets
Carpets
Upholstery
Mattresses
Contact today!
Nars
083-261-6469

Garden Services

24/7 Tree Cutting
Free quote.
Cheap and reliable rubble removal.
Richy 071-993-1710

TREE CUTTING: Free quote and removable. Tel 078-260-7820.

General Services

APPLIANCE REPAIRS
fridges, regas, wash machines, stoves etc.
076-061-0861

General Services

D & J REMOVALS
Vullis, bourommel
083-449-1449

Plumbing

PRO-MAN PLUMBERS
Restoration of Cast Iron baths and basins, weak hot or cold water pressure, installation of JOJO tanks, block drains, geyser instalation and burst pipes.
Call
(053)832-2250/42
or 060-913-9878.
Available 24/7

Childcare

After-care and Holiday Care

Holiday care (June) holidays

Full day from 07:00 till 17:00
Tuition will be done during the day, Maths, Reading, etc.

After-care - Grades 1 to 4 from 13:00 till 17:00

Commencing Tuesday, 18 June 2019

Contact 072-136-0145

Legals & Tenders

DFA Diamond Fields Advertiser

Legals

First/Final Notices

In the Estate of the late MARY LILLIAN VIOLET ELSIE PIENAAR, identity number, 230923 0024 088, a widow resident at 19 Heerengracht Avenue, Royldene, Kimberley.
Estate No 918/2018
The First and Final Liquidation and Distribution Account in the above Estate will lie for inspection for a period of 21 (twenty one) days at the office of the Master of the High Court, Kimberley, from date of publication hereof.
KJ SPANGENBERG
Van de Wall Incorporated, DS Corns Building, 69 Memorial Road
Kimberley, 8301
(KJS/D12808)

Public Notices

MAZELSFONTEIN KATLANI COMMUNAL PROPERTY ASSOCIATION
ACCEPTENCE OF PROSPECTING RIGHT
(NC30/5/1/1/2/12343 PR)

In terms of Section 16(4) and Regulation 3 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and NEMA, 1998 (Act 107 of 1998) as amended, the Department of Minerals and Energy has accepted an application made by Mazelsfontein Katlani CPA to prospect for diamond, diamond alluvial, diamond general, diamond in kimberlite on farm Katlani 236, located in the Siyancuma district, Northern Cape. A copy of the Scoping Report for this proposed development is accessible at both Kimberley and Douglas libraries for public review.

Any interested or affected parties are hereby invited to submit their comments, objections or queries in writing to the consultant mentioned below by no later than **18 July 2019**, for attention:

Thaya Trading Enterprise
9705 1st Avenue
Kathu
8446
Tel 071-959-9207
Fax 086-522-1335
E-mail: info@thayatrading.co.za

HERITAGE IMPACT ASSESSMENT FOR PROSPECTING & MINING ON THE FARM KATLANI 236 NEAR DOUGLAS, NORTHERN CAPE
PUBLIC PARTICIPATION

CONTACT REGISTER

DATE	NAME	ORGANISATION	PHONE / EMAIL	SIGNATURE
24 July 2019	Willie Williams	Mazelsfontein / KATLANI CPA	073 936 7724	
24 July 2019	Johannes NERO	Mazelsfontein / Katlani CPA	082 719 3932	
24/July/2019	Willem Goss	Mazelsfontein Katlani CPA.	084 609 8384	
24/07/2019	Elton Kalahie	Mazelsfontein / Katlani CPA	073 520 0750	
24/07/2019	Denver Bosenaer	Mazelsfontein / Katlani CPA	—	
24/07/2019	Koos NAMKIA.	Mazelsfontein Katlani CPA.	063 234 204/063 1234204.	
24/07/2019	Fanie FERARO	Mazelsfontein Katlani CPA.	083 361 7520	
24/07/2019	Henrik Plaatjies	Mazelsfontein Katlani CPA.	—	
24/07/2019	Harlton Wiliams	Mazelsfontein Katlani CPA	071 789 2161	
24/07/2019.	Heinrich Stevens	Mazelsfontein Katlani CPA	—	
24/07/2019	Henrie Damons	Mazelsfontein Katlani CPA.	064 145 3449	
24/07/2019	Pieter Kuck.	Mazelsfontein Katlani CPA.	071 254 1041	
24/07/2019	Vuyo Vomoami	Agriculture office	087 6300 383	

(AHSA) Archaeological and Heritage Services Africa (Pty) Ltd

HERITAGE IMPACT ASSESSMENT FOR PROSPECTING & MINING ON THE FARM KATLANI 236 NEAR DOUGLAS, NORTHERN CAPE
PUBLIC PARTICIPATION

CONTACT REGISTER

DATE	NAME	ORGANISATION	PHONE / EMAIL	SIGNATURE
24/07/2019	S. Beeysen	Agriculture Land/Reform	079 862 9755	
24/07/2019	SENZO	Ubuntu	073 7469 864	
24/07/2019	Vusi	Criminal	076 502 7187	

HERITAGE IMPACT ASSESSMENT FOR PROSPECTING & MINING ON THE FARM KATLANI 236 NEAR DOUGLAS, NORTHERN CAPE

PUBLIC PARTICIPATION

1. MINUTES OF THE PUBLIC PARTICIPATION MEETING HELD AT THE FARMSTEAD, KTALANI 236 ON 24 JULY 2019.

1.1. Background

The farm Katlani was recently acquired by the Mazelsfontein/Katlani Community Property Association under a land restitution claim. The community appointed an executive committee to run the farm on commercial lines. In this way the community has maintained the infrastructure pre-existing on the property and agricultural operations have continued to function normally with substantial private investment and government support. The community resident on the farm are workers (and their families) from the local community. The community is closely bound by a common purpose, to run a business for local beneficiation through employment.

1.2. Meeting with Executive Committee and Workers of the Mazelsfontein/Katlani Community Property Association

The Meeting with members of the Executive Committee and workers was held at the farmstead. It was brief as most attendants were workers who suspended duty at various sites on the farm. The Farm Manager, Mr William Gous, introduced the Executive Committee led by Mr Willie Williams (the Chairman). Mr Johannes Nero the Vice Chairman said he was pleased I had come to carry out the heritage impact assessment as required in law. He said the economic viability of the farm was a vital concern as most CPAs were struggling to maintain properties after reclaiming the land.

I was then asked to present my agenda. I informed the meeting that the law required any development project (such as mining and prospecting) to mind the heritage resources on a property, especially graves and sacred places. I said that the onus was on the developer to put in place measures to protect such heritage resources. I also stressed that heritage law and policy embraced plurality, and that heritage of different cultural groups in the area must be respected.

I pointed out that the graffiti/ recent etchings on the petroglyph site were a criminal offence, and that it was the responsibility of the farm management to make sure there were no further such acts of vandalism.

The Executive Committee concurred and apologised for the damage already caused.

I advised the Committee that in order to lend additional protection to the engravings, the Committee must send a proposal SAHRA for the engravings to be declared a Grade II (Provincial) Site in terms of Section 7 of the National Heritage Resources Act.

The meeting ended with Mr Johannes Nero thanking me for raising awareness about the value of the sites.

END

18 July 2019

WELCOME AND INTRODUCTION

Mr Kwindla Nobaza opened, welcomed and thanked everyone for attending the meeting. He then requested on of the attendees to translate from English to Afrikaans and vice versa. Fortunately, one person availed themselves for that service.

Purpose of the Meeting

Kwindla Nobaza explained that the purpose of the meeting was to consult stakeholders about the proposed prospecting/mining project as well as the environmental impact assessment process that is currently underway. The public meetings were to consult stakeholders of the identified key issues, to provide stakeholders the opportunity to raise additional issues or concerns, among others, that have not been identified in the Environmental Impact Assessment Report (EIAR).

Presentation on the Project Description

The consultant presented on the following:

- Project background and description
- Environmental Process overview
- Existing status quo (environmental) and Specialist Studies to be conducted
- Potential environmental impacts
- Proposed public participation process and progress made
- Questions – Question session, General Comments and Queries
- Closure

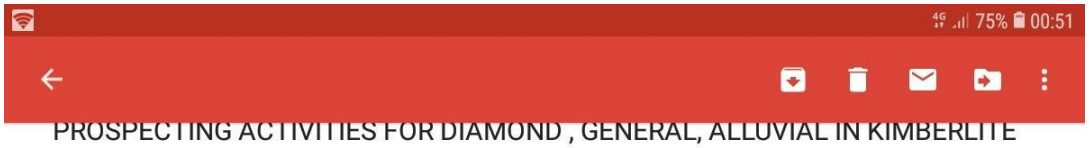
Questions for clarity on Project Description

Issue Raised	By whom	Answer/Response
Adoption of Agenda	Shedrick Lawrence	They were thanked and proposal to continue was made.
Request for EIA process and price breakdown including timeframes was made. He further asked for the number of Job Opportunities the proposed	Shadrick Lawrence	A copy of cost breakdown may be availed. However, we are not ain a position to commit to timeframes. Some parts of the Orania area is known to be

project was going to create. What prompted the application with the DMR?		bearing diamondiferous gravels. That is one of many reasons there was such an application made. The number of job opportunities to be created may be determined after prospecting and feasibility studies have been conducted.
Not all people want to mine, some of us want farming.	Ashley Visser	We have consultants appointed and specialists commissioned to come up with ways to best manage the environmental impacts that are expected.
The Rehabilitation process and purpose was explained.	Kainerls Visser	The community seems to be blessed with people who have diverse skills such as farming and mining. Mr Visser was thanked for the comprehensive explanation he gave.
How are you going to reduce impact on our heritage resources?	Ashley Visser	The commissioned specialist is going to proposed mitigating factors. Specialist reports to be drafted are going to give some guidance on how to best manage heritage resources.
What are the due dates of reports?	Ashley Visser	According to the letter that was received from the DMR, 12 August is the due date.
Where is the profit money going to go?	Frans Visser	Significant portions are going to go to the CPA and the Investor.

CLOSURE

Mr Kwindla Nobaza extended a word of gratitude to everybody present and closed the meeting. He requested that the community gives the same support to specialists when they visit site to undertake fieldwork.



PROSPECTING ACTIVITIES FOR DIAMOND , GENERAL, ALLUVIAL IN KIMBERLITE IN THE FORM OF A DESKTOP STUDY PERCUSSION DRILLING, CORE DRILLING AD BULK SAMPLING, IN KATLANI 236 IN THE KIMBERLEY DISTRICT Inbox

N

Nicole Abrahams (WR)
to me, René
Yesterday View details

Dear sir/madam

The above listed project bears reference.

I would hereby wish to register as an I&AP for this particular project.

The South African National Roads Agency SOC Limited (SANRAL) has received background information for your proposed study and want to determine whether SANRAL could be impacted by this development.

May I request that you email me a detailed locality plan on which indicated that nearest national road.

If services need to be constructed over or under the national road, within 60m measured from the road reserve fence, the service owner must apply for a written permission from SANRAL, before any work may be carried out.

Attached please find an application form for the proposed encroachment.

Do not hesitate to contact the sender should you have any further queries.

I trust that you will find the above in order.

Regards

Nicole Abrahams
Environmental Coordinator
Western Region
Bellville, Western Cape, 7530,
T: 021 957 4602 | **M:** 062 215 8945
AbrahamsN@nra.co.za | **www.sanral.co.za**
Fraud Hotline Number - 0800 204 558

Prospecting Right Application on Katlani 236

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

Date: Saturday July 13, 2019

Interim Comment

In terms of Section 38(3), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Thaya Trading Enterprise

Prospecting Right (with bulk sampling) Application on Katlani 236, Northern Cape. The commodity of interest is diamond, diamond general, diamond alluvial and diamond in kimberlite. Specialist Reports are going to be generated and uploaded on SAHRIS in respect of this application.

Thaya Trading Enterprise has been appointed by Mazelsfontein Katlani Communal Property Association to conduct an Environmental Authorisation (EA) Application and Prospecting Right (PR) Application for proposed prospecting activities on Katlani 236, near Douglas, Northern Cape (NC 30/5/1/1/2/12343 PR).

A draft Scoping Report (DSR) has been submitted in terms of the National Environmental Management Act, no 107 of 1998 (NEMA), NEMA Environmental Impact Assessment (EIA) Regulations for activities that trigger the Mineral and Petroleum Resources Development Act, 28 of 2002 (MPRDA)(As amended). The proposed prospecting activities include 10 trenches (50 m x 25 m x 4 m deep) and associated infrastructure such as temporary structures, temporary dump site, residue dam, 3 km water pipeline, ±3 km roads, and stockpiles.

The DSR noted that no heritage resources would be impacted by the proposed development, however, no assessment of heritage has been completed as per section 24(4)b(iii) of NEMA or section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

Interim Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit requests that a Heritage Impact Assessment (HIA) be submitted to the case for review as part of the EA and PR application. The HIA must have been completed in terms of section 38(3) and 38(8) of National Heritage Resources Act, Act 25 of 1999 (NHRA). The HIA must be inclusive of archaeological and palaeontological components.

The quickest process to follow for the archaeological component would be to contract a qualified archaeologist (see www.asapa.co.za or www.aphp.org.za to provide an Archaeological Impact Assessment (AIA). The AIA must comply with the SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Component of Impact Assessments.

Prospecting Right Application on Katlani 236

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

Date: Saturday July 13, 2019

A desktop Palaeontological Assessment is required as the proposed development footprint is located within an area of moderate and high sensitivity as per the SAHRIS PalaeoSensitivity map. The report must comply with the 2012 Minimum Standards: Palaeontological Component of Heritage Impact Assessments (a list of qualified palaeontologists can be found at https://www.palaeosa.org/heritage-practitioners.html).

Any other heritage resources as defined in section 3 of the NHRA that may be impacted, such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

The draft EIA and all appendices must be submitted to the SAHRIS application at the beginning of the Public Review Period so that an informed comment may be issued. Further comments will be issued upon receipt of the above.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

Date: Saturday July 13, 2019

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/524384
(DMR - NC, Ref: NC 30/5/1/1/2/ 12343 PR)

Prospecting Right Application on Katlani 236

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

Final Comment

In terms of Section 38(4), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Thaya Trading Enterprise

Prospecting Right (with bulk sampling) Application on Katlani 236, Northern Cape. The commodity of interest is diamond, diamond general, diamond alluvial and diamond in kimberlite. Specialist Reports are going to be generated and uploaded on SAHRIS in respect of this application. Some Specialist Reports pertaining to this application have been generated. Comments from SAHRA are invited.

Thaya Trading Enterprise has been appointed by Mazelsfontein Katlani Communal Property Association to conduct an Environmental Authorisation (EA) Application and Prospecting Right (PR) Application for proposed prospecting activities on Katlani 236, near Douglas, Northern Cape (NC 30/5/1/1/2/12343 PR).

A draft Scoping Report (DSR) has been submitted in terms of the National Environmental Management Act, no 107 of 1998 (NEMA), NEMA Environmental Impact Assessment (EIA) Regulations for activities that trigger the Mineral and Petroleum Resources Development Act, 28 of 2002 (MPRDA)(As amended). The proposed prospecting activities include 10 trenches (50 m x 25 m x 4 m deep) and associated infrastructure such as temporary structures, temporary dump site, residue dam, 3 km water pipeline, ±3 km roads, and stockpiles.

The DSR noted that no heritage resources would be impacted by the proposed development, however, no assessment of heritage has been completed as per section 24(4)b(iii) of NEMA or section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

In an Interim Comment issued on the 13/07/2019, SAHRA requested that a Heritage Impact Assessment (HIA) be submitted to the case for review as part of the EA and PR application. The HIA must have been completed in terms of section 38(3) and 38(8) of National Heritage Resources Act, Act 25 of 1999 (NHRA). The HIA must be inclusive of archaeological and palaeontological components.

Since the issuing of the comment, an HIA and a Palaeontological Impact Assessment (PIA) has been submitted to SAHRA for review with the draft EIA.

Bamford, M. 2019. Palaeontological Impact Assessment for the proposed Prospecting and Mining rights Applications for Katlani 236, west of Douglas, Northern Cape Province.

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

The proposed development area is underlain by non-fossiliferous Namaqua-Natal rocks and potentially fossiliferous Dwyka Group mudstones, which overlain by superficial aeolian sands of the Kalahari Group. No fossils have been recorded from this area and a Chance Fossil Finds Procedure has been recommended and supplied.

Matenga, E. 2019. Phase I Heritage Impact Assessment (Including Palaeontological Assessment) Requested in terms of section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Mine Prospecting and Application for Mining Right on the farm Katlani 236 near Douglas, Siyancuma Local Municipality, Northern Cape Province.

A total of 49 heritage resources were identified within the proposed prospecting rights area. These include 43 site of Medium B significance that do not require further mitigation such as Stone Age lithic surface occurrences and Later Iron Age potsherds, grinding stones and stonewalls. Two structures that may be examples of early modern mining were rated as sites of Medium A significance. A total of two burial grounds (22 graves and were identified and were rated as sites of high significance. Two sites that contain engraved glacial pavements were rated as sites of high significance and has further been recommended to be declared as Provincial Heritage sites. Two cultural landscape sites were identified (Shepherd's tree grove and circular fields) and were rated as sites of Medium A significance. A further site (KAT29) was identified within the river where Jewish miners attempted to dam the river. There is living heritage attached to the site (sacred river snake and a girl's initiation site). This site will be not be impacted.

Recommendations provided in the report include the following:

- The structures (KAT12, KAT17 and KAT36) are recommended to be protected;
- The two burial grounds (KAT01 and KAT28) are recommended to be protected;
- The engraved glacial pavements (KAT13 and KAT14) are recommended to be protected;
- The cultural landscape sites (KAT07 and KAT35) are recommended to be protected;
- A Chance Finds Procedure is recommended to be followed during the prospecting operations.

It is noted that the draft EIA recommends that no-go buffer zone of 100 m will be adhered to around the identified graves.

Final Comment

The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 13927

section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final EIA and EMPr:

- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit and the Burial Grounds and Graves (BGG) Unit has no objections to the proposed development;
- 38(4)b – The recommendations provided by the heritage specialists are supported and must be adhered to. Further specific conditions are provided for the development as follows;
- A no-go bufferzone of 30 m must be adhered to around the following sites: structures (KAT12, KAT17 and KAT36), and engraved glacial pavements (KAT13 and KAT14);
- The 100 m no-go buffer zone around the graves is supported;
- A Heritage Management Plan (HMP) inclusive of a monitoring schedule and reporting procedure must be developed for the in-situ protection and management of heritage resources identified within the development area. This HMP must be developed prior to the commencement of prospecting activities and submitted to SAHRA for comment;
- 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)d – See section 51(1) of the NHRA;
- 38(4)e – The following conditions apply with regards to the appointment of specialists:
- i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The Final EIA and EMPr must be submitted to SAHRA for record purposes;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/524384
(DMR - NC, Ref: NC 30/5/1/1/2/ 12343 PR)

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.

ANNEXURE D
HERITAGE IMPACT ASSESSMENT REPORT INCLUDING PALAEONTOLOGICAL IMPACT ASSESSMENT REPORT (DESKTOP STUDY)

ANNEXURE E
WETLAND STUDY

ANNEXURE F
HYDROLOGICAL IMPACT ASSESSMENT

ANNEXURE G
ECOLOGICAL IMPACT ASSESSMENT INCLUDING BIODIVERSITY STUDY

ANNEXTURE H
GEOHYDROLOGICAL IMPACT ASSESSMENT