mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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 ACTIVITES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMMENDED)

NAME OF APPLICANT:	**DNA RESOURCES (PTY) LTD**
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FILE REFERENCE NUMBER SAMRAD:	**NC 30/5/1/1/2/12883 PR**

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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 and Environmental Authorization 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 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 application.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorization 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 Authorization 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 gathered 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 the applicant.

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process –

(a) Determine the policy and legislative content within which the proposed activity is located and how the activity complies with the responds to the place and legislative context;

(b) identify the alternatives considered , including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine

  (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and

  (ii) the degree to which these impacts –
  (aa) can be reversed

  (bb) may cause irreplaceable loss of resources; and

  (cc) can be managed, avoided or mitigated;

(e) 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 manage and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. Contact person and correspondence address

1.1 Details of

1.1.1 Details of the EAP

Name of the Practitioner:	Lindie Wiehahn
Address:	19 Park Road, Belgravia, Kimberley, 8301
Tel no:	072 141 4164
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Fax No:	086 415 7897
e-mail address:	lindie@liwico.co.za
IAIAsa:	Lindie Wiehahn 5537

1.1.2 Expertise of the EAP

1.1.2.1 The qualification of the EAP

Current qualifications in this field were obtained through short courses at the University of Potchefstroom, which is the following:

- Introduction to Environmental Management (2002)
- Environmental Impact Assessment (2002)
- The Legal Framework for Managing Water in South Africa (2002)

1.1.2.2 Summary of the EAP's past experience.

(In carrying oath the Environmental impact Assessment Procedure)

During the year 2002 Lindie assisted with two Environmental Impact Assessments for a Golf Course development in Modder Rivier (today known as the Magersfontein Memorial Golf Course) and a Cottage development on the farm Avoca in the Douglas district. Later the same year she successfully completed her first sole Environmental Impact Assessment for the development of a filling station on the N12 at Warrenton.

Lindie was employed since then as an Environmental Consultant. Experiences obtained during these years were the drafting of Environmental Management Programmes, Environmental Management Programme Reports, Environmental Monitoring and Compliance Reports and Environmental Risk Reports. She also conducted several Environmental Impact Assessments for Mining Rights on La Reysstryd 53 IO, Lichtenburg (2004), Longlands, Barkly West (2004) and Lohatlha 673, Postmasburg (2009, 2011).

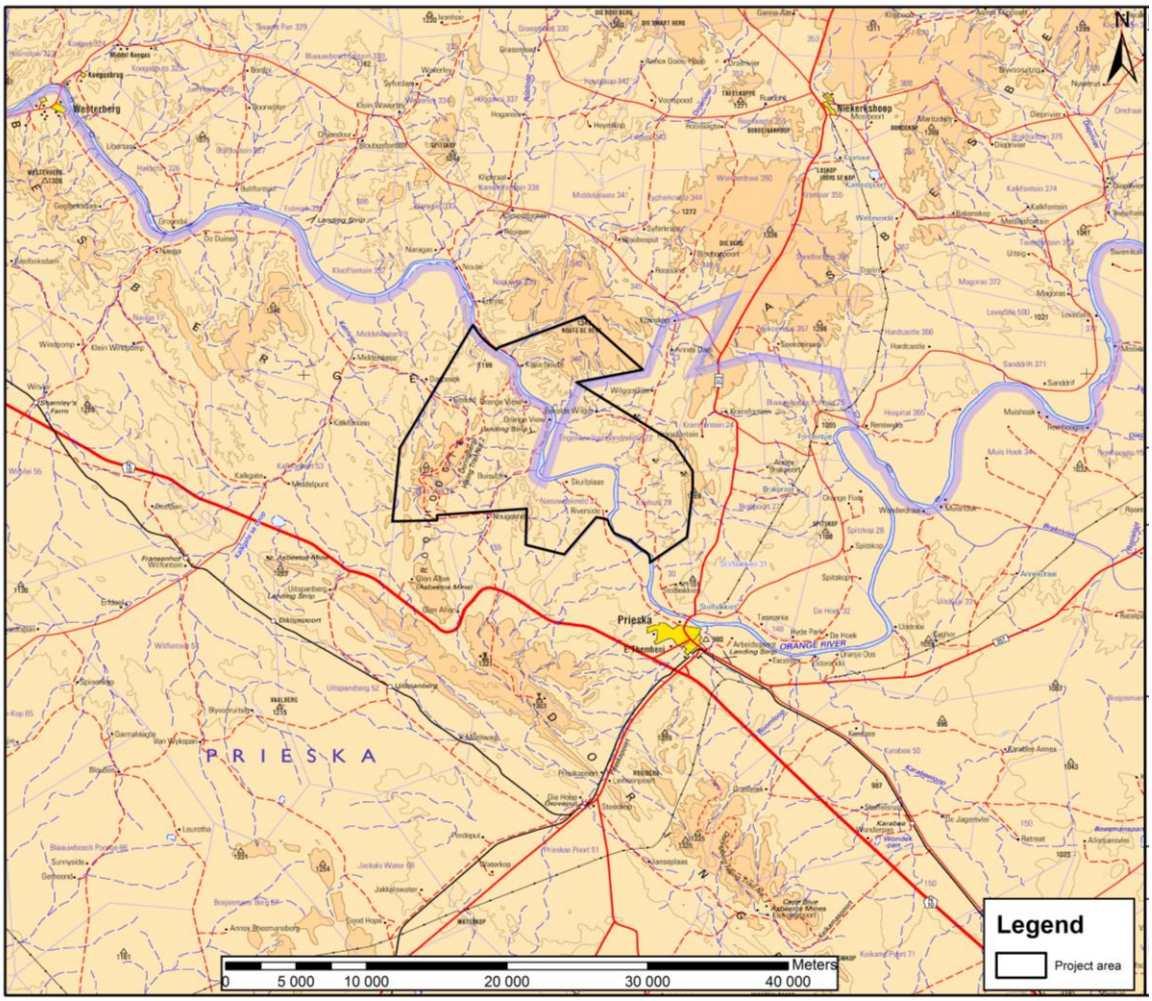
After the liquidation of Geo-Rock International, Lindie went into partnership with John H.R Loots till 2015. During these years she continued working as an Environmental Consultants and successfully an Environmental Impact Assessement on the farm Groot Derm 10, Alexanderbay (2012). From the year 2015 till date she undergone company name changes and is now consulting under LW Consultants.

2. Location of the overall Activity

Farm Name	The Remainder, Portions 2, 3, 4 and 5 of the farm Buis Vlei 19, Portions 1 and 2 of the farm Naauwgekneld 21, the farm Engeldewilgeboomfontein 22, the Remainder and Portion 2 of the farm Kliphuis 29 and the Remainder, Portions 1 and 2 of Farm 346
Application area (Ha)	20 234.3746 ha (Twenty thousand two hundred and thirty four comma three seven four six hectares)
Magisterial district:	Prieska
Distance and direction from nearest town	The project area is situated within the magisterial district of Prieska, approximately 24.7 km north of Priska, 157 km south of Groblershoop and 154 km south-west of Douglas, in the Northern Cape, South Africa
21 digit Surveyor General Code for each farm portion	• Rem / Buis Vlei 19 - C06000000000001900000 • Ptn 2 / Buis Vlei 19 - C06000000000001900002 • Ptn 3 / Buis Vlei 19 - C06000000000001900003 • Ptn 4 / Buis Vlei 19 - C06000000000001900004 • Ptn 5 / Buis Vlei 19 - C06000000000001900005 • Ptn 1 / Naauwgekneld 21 - C06000000000002100001 • Ptn 2 / Naauwgekneld 21 - C06000000000002100002 • Engeldewilgeboomfontein 22 - C06000000000002200000 • Rem / Kliphuis 29 - C06000000000002900000 • Ptn 2 / Kliphuis 29 - C06000000000002900002 • Ptn 1 / Farm 346 - C03100000000034600001 • Ptn 2 / Farm 346 - C03100000000034600002

3. Locality map

(Show nearest town, scale not smaller than 1:250 000)



4. 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)

A detailed plan on the localities of the proposed 20 holes to be drilled cannot be provided at this stage as these are strongly dependent on the outcome and recommendations of the previous phases of the prospecting activities.

4.1 Listed and specified activities

NAME OF ACTIVITY **(E.g. For prospecting –** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc … etc … etc** **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.)**	**ARIAL EXTENT OF THE ACTIVITY HA OR M²**	**LISTED ACTIVITY** **Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTCE** **(GNR 544, GNR 545 or GNR 546)**
Non-invasive activities Literature Review Geological mapping Geophysical survey Surveying and pegging Progress Report	20 234.3746 ha		NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right …
Drilling			
Drilling	Total: <1.8 ha Per hole: 0.09 ha	X X X	NEMA 2017, GNR 327, Listed 1, Activity 27: The clearance of an area of 1 hectares or more, bu less than 20 hectares of indigenous vegetation … NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources … NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA.

Sampling		X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
Sludge from Prospecting activities			Not applicable, will not trigger thresholds
Ablution Facility	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA
Plant site	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA
Chemical storage	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA

Vehicle storage	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA
Diesel storage	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA
Domestic waste facility	Part of drilling footprint	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
Rehabilitation	1.8 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA
Access road and drill traverses	< 0.4 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 20: Any activity including the operation of that activity which requires a prospecting right … (a) associated infrastructure, structures and earthworks, directly related to prospecting of the mineral resources …
		X	NEMA 2017, GNR 327, Listed 1, Activity 22: The decommissioning of any activity … (i) a closure certificate in terms of Section 43 of the MPRDA

4.2 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)

- Construction

  Drilling operations does not have a definite construction phase before commencement of the actual activities. The only activities happening before commencement of the drilling is the establishment of the drilling site and chemical toilet facility.

  Before each hole is drilled an area of 30 x 30 meter for the drill rig and related equipment is cleared of vegetation. All prospecting related structures, facilities and activities is included into the mentioned footprint.

- Operational
  - Non-invasive activities

    The non-invasive prospecting work will take approximately eighteen months and will compile the relevant data and observations from the recent and historical work done on the neighbouring farms. The deliverables will be a detailed report and maps highlighting areas with the best potential to contain the commodities applied for. Once this information has been assessed in detail, it will be used to further develop and refine the ongoing prospecting activities. Aerial photographs and a high resolution satellite image will be acquired for the prospecting right application so that a target identification process using both desktop study and geological mapping. Both desktop study and geological mapping interpretations will be used to focus future prospecting activities. After the Desktop Study, a site geological mapping will be undertaken. The aim is to visit all the targets with the possible commodity bodies identified in the Desktop Study to make sure that there are not cultural features. Planning for the drilling survey will occur at the same time.

    Detailed field mapping of the surface geology with the use of GPS will need to be done to verify and correlate the geology; generating targets from satellite images or aerial photo mapping that identify any possible outcrops in the rest of the proposed application area. The mapping will be focused on outlining features such as linear structures and vegetation anomalies which could indicate the commodity bodies.

    The Gravity/Magnetic survey method will be elected based on the information fathered from literature review, including the data gathered from geological mapping. All the information collected will be used to make the selection for the pre-defined survey points to demarcate the sub-outcrop\s. These points of gravity/magnetic will need to be surveyed as a 1st phase on a 100 m grid to determine the final drill hole positions.

  - Drilling

    20 Holes are proposed at demarcated places with an estimated average depth of 100 m each. Each drill site will have an approximate footprint of 30 x 30 meter for the drill rig and related equipment is cleared of vegetation. All prospecting related structures, facilities and activities is included into the mentioned footprint. These holes will be drilled by means of standard Reverse

Circulation drilling, while Diamond Core Drilling will only be carried out on selected manganese and iron occurrences, and the samples obtained stored in the appropriate fashion for logging and sampling.

To test for, examine, and evaluate a mineral showing in the third dimension, various methods of drilling to obtain samples have been developed. Sampling the subsurface usually involves on or more types of drilling. For the purpose of this exploration exercise, Reverse Circulation and Diamond Core Drilling techniques will be considered as part of the drilling programme. The drill holes will be logged every meter containing information such as hole location, hole depth, commodity depth and other geological structures encountered within the hole. The rock chip and core samples will be taken and stored within the relevant, as for the type of drilling, manner and safeguarded for future referencing.

The exact, of the respective borehole, positions will heavily rely on the data received from geophysical prospecting. These targets are then to be tested by drilling. Reverse and Core drilling are of the least invasive ways of bringing rock samples to the surface, to see the rock types and mineralization that lie below. This exercise is expected to achieve the following;

- Intensive core drilling on prospective sites,
- Lithology of the host rock
- Profile of the mineralized zone
- Depth and/or vertical distribution of the deposit
- Continuity of the deposit and.
- Availing adequate data for the purpose of geo-modeling

Truck mounted drilling rigs, fitted with compressors, will minimize ecological disturbance, however any drilling operation in a thick layers of sand or strata can be an extremely difficult operation, and this result in opting for equivalent/or appropriate drilling equipment. During the entire prospecting programme, efforts will be to minimize the effect on the environment, and it is planned that rehabilitation will commence as soon as each drilling spot has been cleared.

Drilling of the initial holes will be implemented during three states, or phases. The depth of the prospecting boreholes will vary, depending on the depth of the minerals in the rock strata. Boreholes to be drilled (for phase one) will be determined by GPS co-ordinates and surface indicators on site. All drilling samples to be collected in sample bags / core trays on a meter-to-meter basis.

Furthermore, sub-surface core drilling will indicate whether a mineralized zone is sufficient potential to become a deposit. However, by implementing drilling, this will better help to outline the zone with greater accuracy, and confirm that the mineralization is continuous and the estimates of grade and tonnage are correct.

As drilling commences rehabilitation will be done as each hole is completely drilled. When only Reverse Circulation has been used the hole will be backfilled with the rock chip material in their respective manner. Should a

ground water body be encountered / intersected or the need arises for core drilling, the hole will be rehabilitated through the casing and sealing of the hole and the clear marking thereof. Casing of a hole will entail that the ground is excavated with a dimension of 1 x 1 x 1 m. With the casing of the hole, a cement slap of 1 x 1 x 0.5 m is constructed and covered with the excavated soil. Rehabilitation is finalized according management standards. Each hole will be fully rehabilitated before commencing to the next drill location. In this way rehabilitation is time and cost effective

- Decommissioning
  Once the prospecting activities have been completed the mine will start with the decommissioning and closure phase. During such will all infrastructure and equipment be removed and the compacted ground ripped and rehabilitated. Also will all the roads and trampled areas be ripped, rehabilitated and inspected for vegetation re-growth.

5. Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative contect within which the development is proposed including an identification of all legislation, policies, plants, 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 COMPLY WITH AND RESPOND TO THE LEGISLTATION AND POLICY CONTEXT.** (E.g. In terms of the National Water Act a Water Use License has / has not been applied for)
No person may … prospect … for and produce any mineral … or commence with any work incidental thereto on any area without – a ….prospecting permit…	Section 5 (4)(b) of Act 28 of 2002 (MPRDA, 2002 read together with Section 5A (b) of Act 49 of 2008 (MPRDA, 2008)	An application has been lodged with the Department of Mineral Resources.
No person may … prospect … for and produce any mineral … or commence with any work incidental thereto on any area without – an approved environmental management programme or approved environmental management plan, …	Section 5 (4)(a) of Act 28 of 2002 (MPRDA, 2002)	This document serves as the Basic Environmental Assessment and Environmental Management Programme
An environmental impact assessment report must contain all information that is necessary for the competent authority to consider the application and to reach a decision contemplated in regulation 35, an must include - …	Regulation 31(2) of Act 107 of 1998 (NEMA, 1998)	These guidelines and provided template is used in conducting this assessment.

6. 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).

The proposed prospecting project is situated just north of the town Prieska. This area is known for its richness in diamonds, tiger's-eye and copper that can be economically mined. Some of these farms also shows good possibility for Manganese and Iron Ore.

The project area situated within the Prieska area, which is known for its socio-economical poverty. Several mines are operational within the area over the past years giving some relieve to the socio-economic status. The majority of the population within the Siyathemba municipal area is Coloured people contributing 71.9% to the total population of 21 591 people, with the other third of the population mainly consisting of Black African people. To further break the statistics down for the motivation on this project only 63.2% of the total population is of working age from which a staggering approximate value of 24.3% are un-employed with no basic income with a further ± 57.8% of the working population receiving a basic salary of R 3 000.00 or less per month.

The development of a feasible mine will aid in the regions poverty eradication and un-employment statistics. Social upliftment through work security will not only have an effect on local level, but also district level by means of economic growth.

7. Motivation for the overall preferred site, activities and technology alternative

The overall preferred site is to be determined by the geologist after the first phase of prospecting activities. The location of the drill sites will be determined with due consideration towards the biophysical, social, cultural and heritage environment.

The technology decided on will ensure the minimum disturbance to the environment, dust and noise levels as the drilling is of short term and the disturbance temporarily.

No other alternatives in regard to the preferred site, activities and technology is considered as the current planning is the best possible option at this stage to ensure minimal environmental disturbance and cost effective prospecting operations.

8. Full description of the process followed to reach the proposed preferred alternatives within the 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.

During the planning of the proposed prospecting operations, taking the commodity bodies and environmental sensitive features into consideration the only alternatives that could be explored was toward the prospecting related structures and processes.

These structures must be planned outside any environmental feature and their respective buffer zones as well as trying to minimize the footprint and environmental disturbance. Further alterations will be explored during the operations as the need arise.

8.1 Details of the development footprint alternatives considered

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

8.1.1 the property on which or location where it is proposed to undertake the activity
8.1.2 the type of activity to be undertaken
8.1.3 the design or layout of the activity
8.1.4 the technology to be used in the activity
8.1.5 the operational aspects of the activity; and
8.1.6 the option of not implementing the activity

All of the following prospecting and prospecting related activities will occur and have its specified footprint within the project area as applied for at the Department of Mineral Resources.

Detailed and more accurate plans will be submitted to all relevant Departments before commencement or construction of any of the activities described below.

- Geological investigations
  - This activity will be done through desktop studies and field visits. The desktop studies will be conducted through the studying of existing literature, geological maps, aerial photography and satellite imagery. Field visits will only be conducted to verify the desktop findings through geophysical surveys and surface mapping.

  - The technology used will be updated data from various sources and computer software. Field visits are done per foot and modern GPS devices.

  - The investigations will be undertaken by means of reviewing all of the information and data gather by previous and proposed exploration studies carried out of the proposed project area and the review of aerial photos (Satellite imagery).

    All the information gathered will be digitally captured and mapped outlining target features for further prospecting operations.

  - If this activity is not implemented prospecting activities cannot continue without affecting the whole operations. For this reason the option of not implementing the activity cannot be considered.

- Drilling
  - The drill holes will be positioned at targets identified during geological investigations and mapping phase. These holes will each have an overall footprint of 900 m² to include all drilling and prospecting related structures

  - The technology used in this activity will be a Reverse Circulation Percussion drill rig, Diamond Core drill rig, equipment trailer as well as a water- and diesel cart.

  - Holes will be drilled and rock samples obtained, which will be captured for logging and sampling. These samples obtained are geologically logged every meter and stored for future referencing.

- This activity is the planned main activity and necessary to determine the location, extent and depth of the possible ore bodies. Alternatives to be considered are the location of these holes in relation to the environmental features or exercising a no-go option.

- Ablution facility
  - Mobile chemical toilet facilities (each with a footprint of 2 x 2 m) for the drilling operations will be implemented during the drilling operations and form part of the 30 x 30 meter drilling footprint

  - Contractual agreements will be made and basic flushing chemical toilets installed. Within the facility will sanitary bins be provided for their specific needs and emptied on a daily bases. The contracting sanitary company will be responsible for the regular maintenance and servicing of these facilities.

  - These facilities are to support the sanitation protocol of the mine and will be readily available for personal use as needed.

  - The implementation of this structure and related activities is absolutely compulsive and enforced by the Basic Conditions of Employment Amendment Act, 2013 (Act 20 of 2013) in conjunction with the Basic Conditions of Employment Act, 1997 (Act 75 of 1997), Basic Conditions of Employment Amendment Act, 2002 (Act 68 of 2002) and Basic Conditions of Employment Amendment Act, 2003 (Act 52 of 2003)

- Plant site
  - The plant site is situated forms part of the 900 m² drilling footprint.

  - The only technology used during this activities is a core cutter and mobile container for the storing of the drill samples.

  - This activities main function is for the cutting of core samples for laboratory analyzes during the drilling and sampling operations as well as all the samples obtained during the drilling operations must be safely stored at the prospecting site, where after it must be removed to the mine's registered premises during the decommissioning of the mine.

  - The option of not implementing this activity is legislatively ruled out by specific regulations within the Mineral and Petroleum Resources Development Act and Mine Regulations regarding the storing of core during prospecting activities.

- Chemical storage
  - The storage facilities are situated on the supplementary drill vehicle on the already demarcated footprint of 900 m². The storing of chemicals on the vehicles is to ensure minimal environmental disturbance and handling areas.

  - This activity's main function is for the storing and controlling of legislative regulated and/or non-legislative regulated chemicals. The different types of chemicals must be stored separately as well as a differentiation between

used and un-used chemicals should be made. Containers can also be available for the storage of used mechanical parts till the removal thereof.

- The option of not implementing this activity is legislatively ruled out by specific regulations within the Mineral and Petroleum Resources Development Act and National Environmental Management Act regarding the storing of environmental hazardous chemicals.

- Vehicle storage
  - Specific footprint for the parking of vehicles is not calculated as it is planned and will form part of the drilling footprint to minimize operations footprint. The drill rig vehicle will be parked on site where the current drilling is taking place. The area will be demarcated with danger tape to indicate a potential danger zone.

  - Drip trays will be installed to ensure non-spillage. No other technologies will be used during this activity.

  - All vehicles will be parked in these areas and will be required to adhere to the reversed parking policy for the safety of all vehicles in the case of an emergency.

  - Alternatives towards this activity will be the relocation with the drill hole localities to protect and/or avoid environmental features. This activity area is the alternative to a separate vehicle parking zone to ensure minimal environmental disturbance.

- Diesel Storage
  - The drill contractors will supply their own diesel in the form of a diesel cart/s (± 3 000 liter) with already installed bunker bay and will be parked on an impervious sheet within the drilling footprint. No specific footprint is calculated for the activity as it forms part of the calculated drill site footprint of 900 m².

  - The technology used shall be of the highest standards provided by the drill contractors.

  - Diesel will be kept within cart for refueling purposes during the drilling operations. The drill contractor will be responsible for the refueling and maintenance inspection of the cart on a regular basis in town. Machinery will be parked on a plastic floor for refueling activities.

  - Trampling of vegetation is a high probability if the drill vehicle must use town facilities for refueling with the probability of jamming the traffic for a period of time. An alternative to be considered during the drilling operations is that the diesel cart is removed from the site during off time, but may have a greater impact on the environment due to vegetation disturbance while not showing to have a lesser probability for diesel spillage.

- Domestic waste facility
  - The domestic waste facility will be installed on the supplementary vehicle for discarding of domestic waste materials.

  - The technology used shall be of local municipal standard including a tip-proof and scavenger proof container with lid. The drill contractors will be responsible for the daily removal of waste from site to the camp site and on a regular basis to the nearest town or town of accommodation and discarded at the municipal's registered dump facility.

  - All domestic waste on site will be placed within these bins to keep the area clean and litter free.

  - The option of not implementing the activity cannot be taken into consideration as it will result in litter pollution having a huge impact on the environment.

- Access roads and drill traverses.
  - The location and amount of roads will be kept to the bare minimum and will be finalized during the final planning and negotiating stages of the drill programme.

  - The project will rather make use of existing farm roads before constructing temporary roads. The planning of routes will be done in consultation and co-operation of the farm owner and will rather take the form of farm tracks. No foreign materials will be used in the construction of these roads. No vehicles will be allowed to stray from these roads.

  - The roads will be mainly used for traveling to and from site by the contractors and supervisory staff.

  - Should the roads not be implemented and vehicles are allowed to travel how they please trampling of vegetation is a given factor leading to greater environmental degradation that the construction of these roads. Alternatives that should be strongly considered are the usage of existing farm tracks and roads before creating new roads. This will ensure lesser environmental disturbance and vegetation loss.

8.2 Details of the Public Participation Process followed

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

The process undertaken to consult Interested and Affected parties were as follows:

- Registered letters was sent to all Interested and Affected parties to inform them of the proposed prospecting activities and inviting them to raise any comments and/or concerns before the given date.

- An advertisement was placed in the Noodkaap Bulletin to inform the general public of the proposed prospecting activities and inviting them to raise any comments and/or concerns

- All information collected is and will be documented and the proof of evidence appended to this document.

8.3 Summary of issues raised by I&AP's

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

INTERESTED AND AFFECTED PARTIES List the names of persons consulted in this column, and mark with an **X** where those who must be consulted were in fact consulted		**DATE COMMENTS RECEIVED**	**ISSUES RAISED**	**EAP's RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT**	**SECTION AND PARAGRAPH REVERENCE** in this report where the issues and or response were incorporated
AFFECTED PARTIES					
Landowner/s					
Johan J Botha	X				
Jacobus J Botha	X				
Temdale Eiendomme (Pty) Ltd	X				
Percy DLR Oosthuizen	X				
BF Botha & BM Botha	X				
Nederduits Gerformeerde Kerk, Prieska	X				
Lawful occupiers/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councilor					
Municipality:					
Siyathemba Municipality	X				

Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA))					
Department Water Affairs and Sanitation	X				
Eskom	X				
Transnet	X				
South African National Roads Agency	X				
South African Heritage Resources Agency	X				
Communities					
Dept Land Affairs					
Traditional Leaders					
Dept Environmental Affairs					
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	X				

Other Competent Authorities affected					
Department of Public Works and Infrastructure	X				
OTHER AFFECTED PARTIES					
Thunderflex 78 (Pty) Ltd	X	21 Oct 2021	• PR Renewal on Engeldewilgeboomfontein 22 • Granted MR on Blaauputs 23 and Kliphuis 29 • Although different minerals will co-operative operations not be possible	21 Oct 2021 Dept. Mineral Resources and Energy forward objection to Mr. Monchonyane for further handling.	
INTERESTED PARTIES					

8.4 The Environmental attributes associated with the alternatives

(The environmental attributed described must include socio-economic, social, heritage, cultural geographical, physical and biological aspects)

8.4.1 Baseline Environment

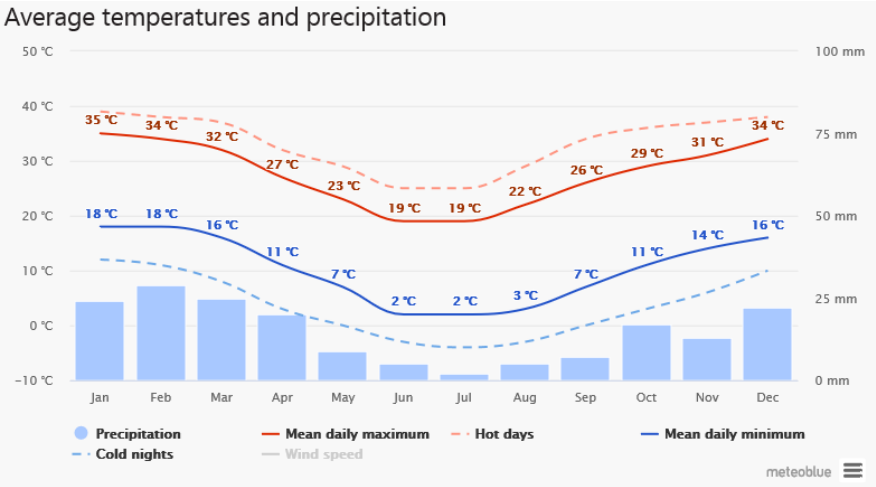
8.4.1.1 Type of environment affected by the proposed activity

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

- Geographical environment:
  - Geographical location:
    The proposed project area is situated within the Northern Cape Province, north of the town Prieska, south of the town Groblershoop and south west of the town Douglas

  - Climate and rainfall:
    The weather provides hot summers and cold dry winters. It is not unusual for the winter night time temperatures to drop below freezing.

    With the extraordinary wet season the Northern Cape experienced during the summer of 2020/2021, average data will rather be used. Temperature data for the region range from 19°C in June/July to 35°C in January. The region is the coldest during July when the temperatures drops to 2°C on average during night.

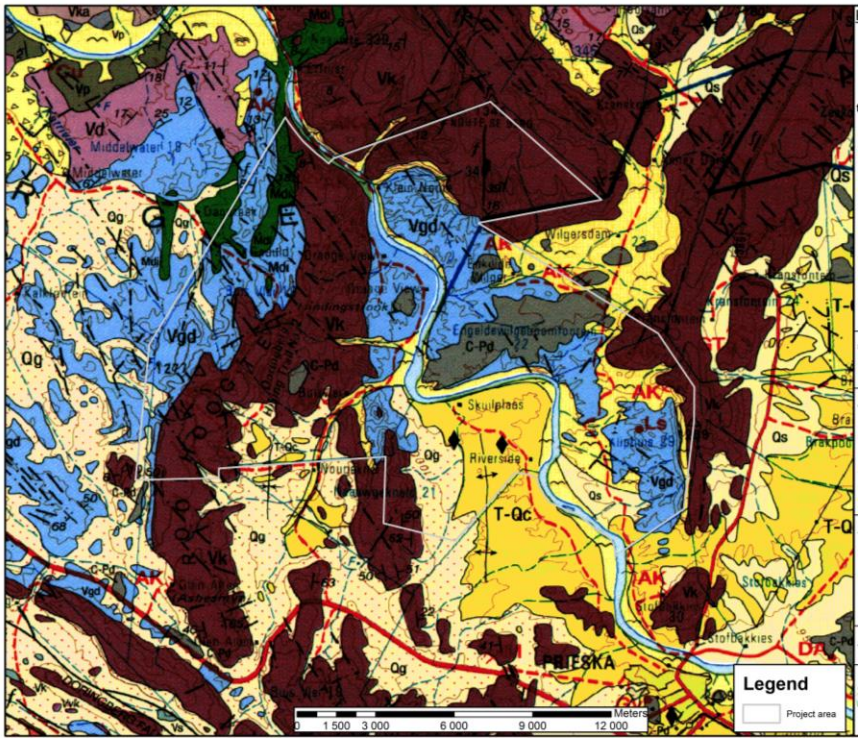


The project area further falls within the summer rainfall area with a mean annual average of 244 mm, with February as the wettest month and July as the driest.

- Geology[1] and soils[2]:
  The bedrock consists of Andesittic Vetersdorp lavas overlain by Dwayka Tillites and mudstones of the Ecca group – Karoo Supergroup. To the north the Asbesberge is made up of dolomites and banded iron formation of the Griqualand West Sequence.

  Prior to the Karoo period, the Orange River cut a network of channels closely approximately the present floodplain. These channels were then utilized by the subsequent glaciers and filled with the Dwyka tillites and shales (250 million years ago). The post Karoo Orange River subsequently incised into these formations and deposited gravels of the Rietputs Formation on mainly three terraces.

  The bedrock consisting of horizontally bedded greenish tillites results in wide braided channels in comparison to narrow, well-defined channels with potholes as found in the Ventersdorp lava bedrock.



  Soils are derived from the ancient basement granites and gneisses of the Namaqualand Mobile Belt on the south edge of the Richtersveld Caraton. Red and yellow apdal, freely draining young soils dominate most of the area. Deep alluvial soils occur along the Orange River.

[1] Project Prospecting Work Programme, TM Simango, 2021

[2] Low and Rebelo, Vegetation of South Africa, page 54

- Physical environment:
  The project area and surrounding landscape can be characterized as adulating to mountainous with steep slopes towards the non-perennial streams and Orange River. The few flat plains are utilized for irrigation.

- Biological environment:
  - Fauna:
    Most of the natural wild fauna within these areas are nocturnal and may include, but not limited to, the Silver-back Jackal, Bat-ear Fox, Cape Hare and several other rodent species. Migrating Kudu's in well known within this area and can be seen from time to time.

  - Flora[3]:
    The project area falls within the Orange River Nama Karoo Biome. In places, the region is very rocky and possesses a "broken" topography with Quiver Tree (*Aloe dichotoma*), Bushman Poison Tree (*Euphorbia avasmontana*) and Aggenys Milkbush (*Euphorbia gregaria*) normally associated with the steep slopes of the mountains and hills of the area. On the pediments, spike flowered Black Thorn (*Senegalia mellifera*), Threethorn (*Rhigozum trichotomum*), Shepherd's Tree (*Boscia albitrunca*) and Stink Shepherd's Tree (*Boscia foetida*) are common trees and shrubs.

[3] Low and Rebelo, Vegetation of South Africa, page 54

Silky Bushman Grass (*Stipagrostis uniplumis*) often dominates the plains, especially after good summer rains. There are abundant thickets along the banks of the Orange River itself, with Wild Tamarisk (*Tamarix usneoides*), Buffalo thorn (*Ziziphus mucronata*) and Camel Thorn (*Vachellia erioloba*) common along the dry riverbeds of the tributaries as well.

- Heritage environment:
  The area has potential to contain microfossils, but the existing status of other heritage resources such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves of victims of conflict and cultural landscapes and/or viewscapes are unknown.

- Socio-economic environment:
  According to Census 2011, Prieska has a population of 14 246, of whom 23.6% are Black African, 67.4% are Coloured, 8% are White, with other population groups making up the remaining 1%.

  The education levels in the district are significantly low, 21.9% had some primary schooling, 7.6% completed primary, 34.6% had some secondary schooling and 20.5% had matric. Only 5.4% had a higher qualification and 10.1% no form of schooling. Poor education standards have resulted into high levels of unskilled labour force.

  This has in turn contributed to the high unemployment levels in the area (24.3%) and low wages for those employed. Most of the area's rural population is employed in agriculture as farm workers as well as on the mines. A small amount of workers find employment in retail and light industries in surrounding smaller towns.

- Cultural environment:
  The cultural environment of the proposed project area can be described as a mining and farming community with their everyday norms of the western culture.

8.4.1.2 Description of the current land uses

The current land uses of the project area and surroundings can be best described as livestock and/or game farming and mining on the farms in the vicinity.

8.4.1.3 Description of specific environmental features and infrastructure on the site

Specific environmental features and / or infrastructure occur on site include:

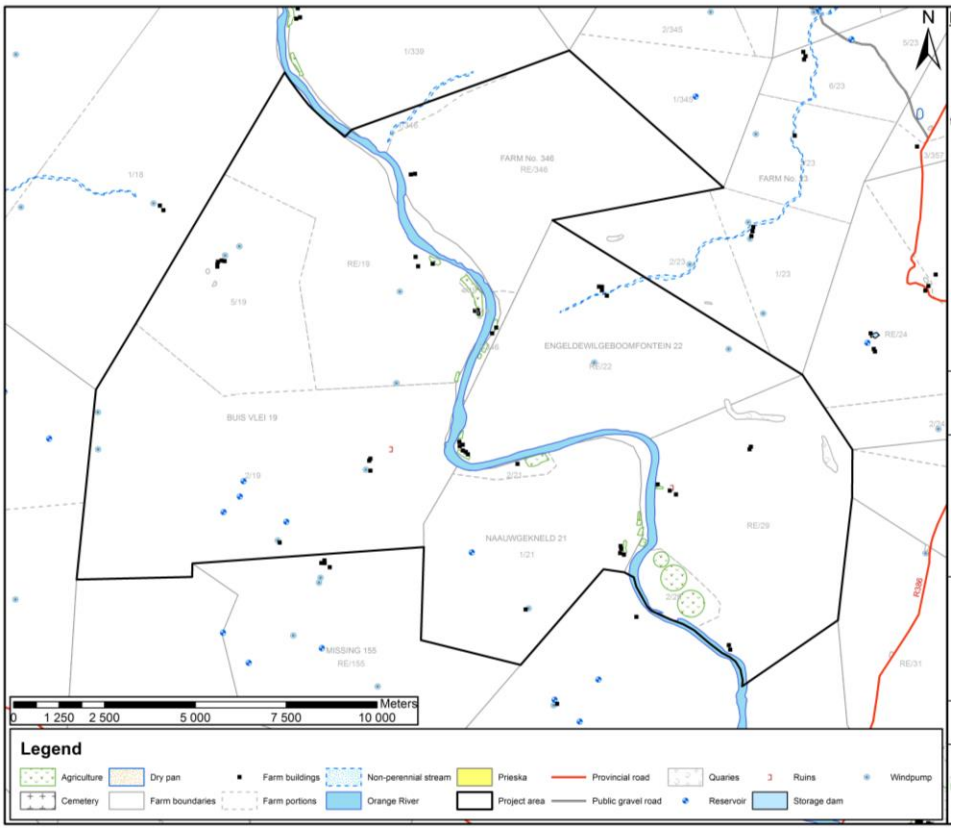
- Agricultural lands
- Farm buildings
- Orange River
- Quarries / Old mines
- Reservoir
- Ruins
- Significant Non-perennial streams
- Water boreholes / Wind pumps

Specific environmental features and / or infrastructure occur on within a 6 km proximity include:

- Agriculture lands
- Cemetery
- Dry pans
- Farm buildings
- Farm storage dam
- Orange River
- Prieska town
- Provincial roads
- Public gravel road
- Quarries / Old mine
- Reservoir
- Significant Non-perennial streams
- Water boreholes / Wind pumps

8.4.1.4 Environmental and current land use map

(Show all environmental and current land use features)



8.5 Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts may occur

(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)

ACTIVITY	DESCRIPTION	Se	D	SP	C	P	Si
1. CONSTRUCTION PHASE IMPACTS							
Road construction	Loss of vegetation + habitat	L	L	L	L	L	L
Escom line	Loss of vegetation + habitat	NOT APPLICABLE					
Plant construction	Loss of vegetation + habitat	L	L	L	L	L	L
Pipeline installation	Loss of vegetation + habitat	NOT APPLICABLE					
Offices	Loss of vegetation + habitat	NOT APPLICABLE					
2. OPERATIONAL PHASE IMPACTS							
Prospecting	Geological degradation	L	L	L	L	M	L
Disposal	Topographic change - dump	L	L	L	L	L	L
Prospecting	Topographic change - pit	NOT APPLICABLE					
Prospecting	Soil pollution - accidental spills and leakages	M	L	L	H	M	H
Operation	Soil pollution (workshop, store, parking)	M	L	L	H	M	H
Operation	Loss of grazing	L	L	L	L	L	L
Operation	Loss of/ disturbance to plants	L	L	L	L	L	L
Extraction of groundwater	Depressed water table	NOT APPLICABLE					
Operation	Problem plant invasion	L	L	L	L	M	L
Operation	Effect on animals	L	L	L	L	L	L
*Waste water disposal	Water regime (regional)	L	L	L	L	L	L
Prospecting	Noise (earth moving equipment and crushers)	L	L	L	L	M	L
Operation	Air quality: Dust - Transport/ Drilling	L	L	L	L	M	L
Operation	Air quality: Dust - Crusher	NOT APPLICABLE					
Prospecting	Noise - blasting nuisance - regional	NOT APPLICABLE					
Prospecting	Noise - blasting nuisance -personnel	NOT APPLICABLE					
Prospecting, operation	Loss of archaeological items	M	H	L	M	M	H
Prospecting	Sensitive landscapes	M	H	L	M	M	H
Mining	Visual impact	L	L	L	L	L	L
3. DECOMMISSIONING PHASE IMPACTS							
Demolition	Waste disposal	POSITIVE					
Rehabilitation	Re-vegetation	POSITIVE					
4. RESIDUAL IMPACTS AFTER CLOSURE							
Vacated site	Rehabilitation of exposed areas	POSITIVE					
Vacated site	Safety risks	POSITIVE					

8.6 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 were determined in order to decide the extent to which the initial site layout needs revision).

Methodology used in determining and ranking the nature of the possible impacts caused by the proposed listed activities includes:

- Identify all mining and mining related activities of the proposed project
- All identified activities are analyzed and potential impacts identified per activity
- Using specific impact criteria to determine the significance, consequence, extent duration and probability of each identified impact per activity.

The environmental evaluation is done with the assumption that all mitigatory measures and rehabilitation plans have been adhered to (Hacking, 1999). The preceding list of identified impacts is evaluated hereunder in terms of the following criteria:

SEVERITY

- *Low negative impact* (indicates a state of 'calmness' concluding that the effect the operations may have on the environment is so insignificant that the wellbeing of the environment or any individual will not be degraded or prohibited.)

- *Medium negative impact* (describes as state of 'manageable stress', giving the idea of that the effect of the operations on the environment is significant enough to cause tolerable disturbance to the wellbeing or overall conditions of the environment or any individual.)

- *High negative impact* (indicating a state of 'high stress', meaning that the effect of the operations on the environment is so significant that the wellbeing and overall conditions of the environment or any individual will be degraded or prohibited.)

DURATION

- *Short-term* (short-term duration is rated as a period less than two years and indicated as a low impact.)

- *Medium-term* (medium-term impact is rated as the period between 2 and 5 years and indicated as a medium impact.)

- *Long-term* (long term impact is rated as the any period exceeding 5 years and indicated as a high impact.)

SPATIAL SCALE

- *Localized* (the disturbance occurs within a radius of 500 m from point of existence and indicated as low impact)

- *Fairly widespread* (the disturbance is carried over a short distance, between 500 m and 1 km radius from point of existence and indicated as medium impact)

- *Widespread* (disturbance exercise a negative affect over an area greater than 1 km radius from point of existence and indicated as high impact.)

CONSEQUENCE

- *Low consequence* (meaning that the probability of cumulative impact occurrence is minimal with little to no lasting effects and is indicated as low impact)

- *Medium consequence* (meaning that the probability of cumulative impact occurring exists with a moderate, short-term lasting effect and is indicated as medium impact.)

- *High consequence* (meaning that the probability of cumulative impact occurrence is absolute with a short to medium-term lasting effect and indicated as high impact)

SIGNIFICANCE

- *Low overall significance* (the disturbance caused by the impact is minimal with an excellent probability for total recovery after operations ceased.)

- *Medium overall significance* (the disturbance caused by the impact is moderate with a good chance for total recovery over an intermediate period after operations ceased.)

- *High overall significance* (the disturbance caused by the impact is severe with a poor to no probability for recovery after operations ceased.).

LEGEND FOR TABLES

Se	-	Severity	D	-	Duration
SP	-	Spatial Scale	P	-	Probability
Si	-	Significance	L	-	Low negative impact
H	-	High negative impact	M	-	Medium negative impact

8.7 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 compered to alternative layout options to accommodate concerns raised by affected parties)

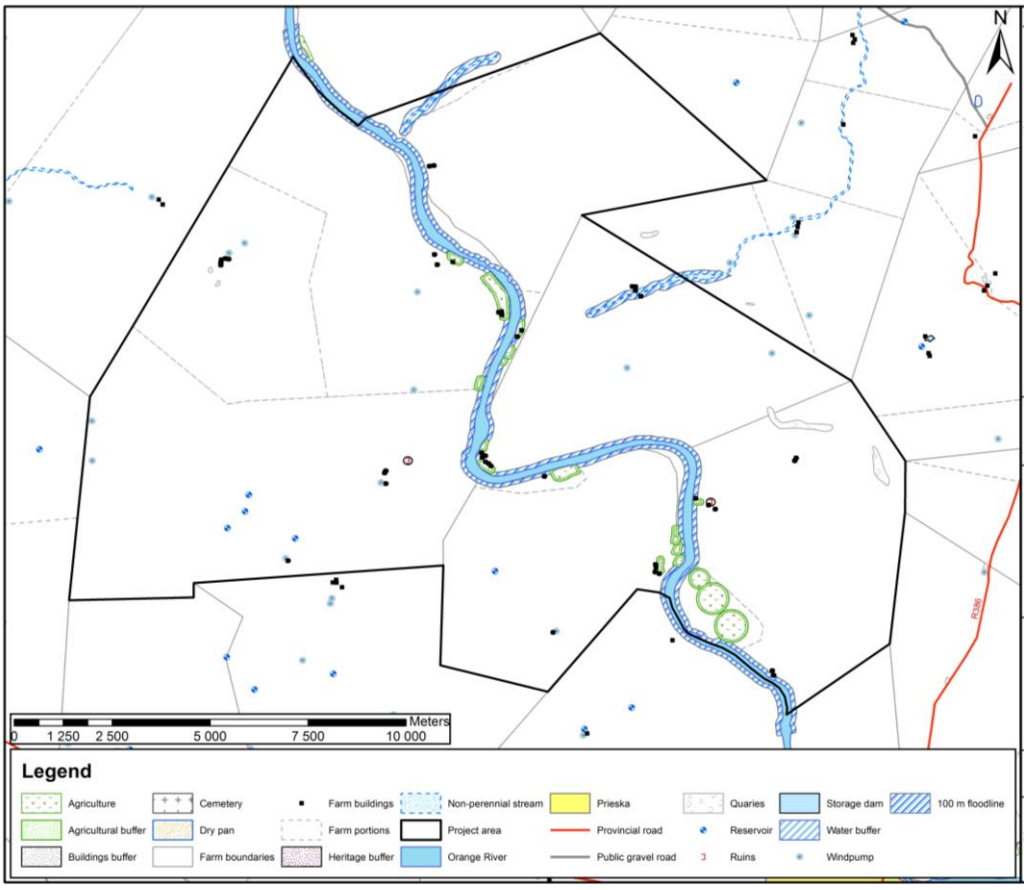
The proposed prospecting operations shows to have an overall low negative impact on the property. Any alterations to the prospecting activities may result in a lesser significant impact on the environment, but not significant enough to consider alterations.

The residing farm owner and surrounding community may be minimally influenced by the prospecting operations in regard to noise and air quality loss. After considering alternative processes, the alterations did not proof any significant minimization of the impacts affecting the farming activities and residing individuals. It is rather recommended that more strict implementation and adherence to the mitigation measures are enforced.

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

(With regard to the issues and concerns raised by affected parties proved a list of the issued 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)

Dust upliftment and prospecting created noise might be of the two major concerns where mitigation measures are the dampening of the roads and/or cleared areas and keeping activities creating undue noise to more acceptable hours will be implemented.



Several environmental significant sites and features occur within the area which will need avoidance:

- Agricultural lands: Any prospecting and or prospecting activities must be at least 50 meters away from any agricultural crop production lands and/or agricultural irrigation lands, or the prospecting have to take place in the non-production season.

- Buildings: Any prospecting and/or prospecting activities must stay at least 50 m clear form any farmstead fence or farm building infrastructure demarcated area.

- Orange River: All natural water resources must be avoided and protected as stipulated by the National Water Act. A 'buffer zone' of 100 m (also the floodline) from the riverbank will be implemented and the area should be avoided during any prospecting and/or prospecting related activity.

- Reservoir: All water resources must be avoided and protected as stipulated by the National Water Act. A buffer zone of 50 m from the edge of the borehole will be implemented and the area should be avoided during any prospecting and/or prospecting related activity.

- Ruins: Historical sites needs to be preserved as far as possible. A buffer zone of 50 to 100 m, depending of the significance and recommendation of the Archaeologist, needs to be adhered to and the area avoided during any prospecting and/or prospecting related activity.

- Significant Non-perennial streams: All natural water resources must be avoided and protected as stipulated by the National Water Act. A 'buffer zone' of 100 m (also the floodline) from the pan's edge will be implemented and the area should be avoided during any prospecting and/or prospecting related activity.

- Water boreholes / Wind pumps: All water resources must be avoided and protected as stipulated by the National Water Act. A buffer zone of 50 m from the edge of the water boreholes / Wind pump will be implemented and the area should be avoided during any prospecting and/or prospecting related activity.

8.9 Motivation where no alternative sites were considered

Alteration in the prospecting processes were considered, but ruled out during the early stages of the planning due to the fact that they proofed not to have any lesser effect on the environment. Any alterations will be the elimination and/or re-positioning of the drill holes should they fall within a buffer zone.

Drill hole positioning and footprint planning must be done to ensure the best possible option with the minimal negative impacts in regard to the biophysical, socio-economic and cultural environment while verifying the commodity.

8.10 Statement motivation the alternative development location within the overall site

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

As detailed in Part A Section 8.7, 8.8 and 8.9 of this document no alternative developments towards the prospecting processes are considered and will be kept as originally proposed due to that any alterations proof not to significantly minimize impacts. The only alternatives that will be considered will be the relocation of the activities in relation to the environmental features.

9. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity

(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures)

The process of identifying, assess and rank the impacts and risks that may result from the activities is done firstly through looking at every aspect of the specific activity and the treat is poses. All activities are assessed against possible vegetation loss, topographic change, soil pollution, depressed water table, invader plant establishment, migration of animals, loss of water quality, noise and dust generation, and destruction of possible archaeological and sensitive landscapes as well as waste disposal and are rehabilitation/re-establishment.

The assessment of impacts is done as a low, medium or high ranking. These rankings are given for several factors, which will conclude into a final ranking. These factors include the Severity of the impact, Duration of impact, Spatial scale of impact, Consequence of impact and the Probability of impact occurring.

The final ranking, the Significance of an impact, is concluded from the above factors giving an indication of the probability of total recovery after operations ceased. The rehabilitation of the environment during and/or after operations has a positive effect on the impact significance.

9.1 Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties.)

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, conveyers, etc...etc...etc.)	**POTENTIAL IMPACT** (E.g. dusts, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc.)	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated. (E.g. Construction, commissioning, operational, decommissioning, closure, post-closure.)	**SIGNIFINCANCE** If not mitigated	**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....	**SIGNIFICANCE** If mitigated
Non- invasive activities	Vegetation	Loss	Operational	Low	Restriction to existing roads	Low
	Geological	Loss		-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Low	Immediate rehabilitation	Low
	Grazing	Loss		Low	Restriction to existing roads	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction to roads	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Domestic waste handling	Low
	Fauna	Migration		-	-	-
	Water quality	Loss		-	-	-
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Speed restriction	Low
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		-	-	-
	Visual impact	Scenery loss		-	-	-
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		-	-	-

	Exposed area Rehab	Re-vegetation	After closure	-	-	-
	Safety risks	Waste disposal		Low	Closure standards	Positive
Drilling	Vegetation	Loss	Construction	Low	Vegetation clearing control	Low
	Geological	Loss	Operational	Medium	Rehabilitation	Low
	Topographic	Change		-	-	-
	Soil	Pollution		High	Immediate rehabilitation Continuous inspections Impervious sheet layout	Medium
	Grazing	Loss		Low	Rehabilitation Traffic restriction to roads	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction to roads Vegetation clearing control Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Removal of invader species Domestic waste handling	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Low	Area rehabilitation Adhere to mitigation measures	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Dampening of roads Speed restriction Dust filter during drilling	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Ablution	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		Medium	Facility maintenance Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Rehabilitation Restriction to cleared area	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Vegetation clearing control	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Removal of invaders	Low
	Fauna	Migration		-	-	-
	Water quality	Waste water		Medium	Waste water management Regular septic tank draining	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Watering of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Plant site	Vegetation	Loss	Construction	Forming part of the drill footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Continuous inspection Chemical handling protocol	Low
	Grazing	Loss		-	-	-
	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		-	-	-
	Fauna	Migration		-	-	-
	Water quality	Storm water		Medium	Storm water management Adhere to mitigation measures	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Low	Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Chemical storing	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Continuous inspection Chemical handling protocol	Low
	Grazing	Loss		-	-	-

	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		-	-	-
	Fauna	Migration		-	-	-
	Water quality	Storm water		-	-	-
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Medium	Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Vehicle parking	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		High	Regular inspections Immediate rehabilitation Drip-tray installation	Medium
	Grazing	Loss		Low	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Removal of invaders Domestic waste management	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Medium	Adhere to mitigation measures Soil pollution management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Damping of exposed area.	Low

	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Invader plant removal	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Diesel Storage	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Regular inspections Immediate rehabilitation Impervious sheet layout Regular maintenance	Medium
	Grazing	Loss		Low	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Removal of invaders	Low
	Fauna	Migration		-	-	-
	Water quality	Storm water		Medium	Soil pollution management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Dampening of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Domestic waste	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures.		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil / Litter	Pollution		Medium	Immediate clean-up Continuous inspections	Low
	Grazing	Loss		-	-	-
	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna			Low	Adhere to mitigation measures Immediate clean-up	Low
	Water quality	Storm water		-	-	-
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Medium	Adhere to mitigation measures Waste Management	Low
	Visual impact	Scenery loss		Medium	Waste management Litter pollution management	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Access road and drill traverses	Vegetation	Loss	Construction	Medium	Use of existing road Vegetation clearing control Minimum roads possible	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		Medium	Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Restriction to roads Rehabilitation	Low

	Vegetation	Loss/disturbance		Low	Restriction to roads Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Continuous inspections	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Medium	Storm water control Erosion control Soil pollution management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Damping of mine roads. Speed restriction	Low
	Archaeological items	Loss		High	Avoid sites of significance Restriction to roads	-
	Sensitive landscape	Destruction		Low	Avoid significant sensitive sites Adhere to mitigation measures Rehabilitation	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

10 Summary of specialist reports

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALITST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an **X** where applicable	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALITS RECOMMENDATIONS HAVE BEEN INCLUDED
The various specialist studies have been requested and will be submitted as soon as received			

Attach copies of Specialist Reports as appendices

11 Environmental impact statement

11.1 Summary of the key findings of the environmental impact assessment

During the conduction of the Basic Impact Assessment several key element regarding the proposed project came under attention:

- With due consideration towards the negative impact the prospecting activities pose on the environment with the knowledge of the current status of the environment, it can be concluded that the prospecting activities may have some negative impact on the area.

- The community from nearby towns will benefit from the prospecting activities through accommodation and related service needs

- Should the operations proof mine feasibility and mine development follow economic upliftment will have a positive impact on the region.

11.2 Final Site Map

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

The final site map can only be provided after Phase 1 of the prospecting operations and the final location of the drill sites determined. This map will be submitted to the Department of Mineral Resources and all other relevant authorities before the commencement of any invasive prospecting operations.

11.3 Summary of the positive and negative impacts and risks of the proposed activity and identified alternative.

Throughout the document the focus point was to identify and assess the negative impacts the proposed operations may have on the bio-physical, socio-economic and cultural environment. The major negative influences the proposed operations may pose are noise disturbance, alleviated dust levels, and vegetation loss.

12 Proposed impact management objectives and the impact management outcomes of 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 authorization.)

The proposed impact management objective is to create environmental sustainable prospecting operations by the management, remediation or elimination of environmental impacts through the implementation and adherence of mitigation measures as legislatively required.

The above mentioned outcomes can be achieved through the implementation of the following impact specified objectives and their outcomes:

- Minimizing of vegetation loss caused by construction and site maintenance:
  - Vegetation clearing control
  - Rip and rehabilitation of unnecessary compacted areas
  - Adherence to mine roads
  - Implementation of a no wood collection and no open fire policy

- Prevention of soil pollution due to chemical spillage
  - Regular maintenance of machinery.
  - Inspection on chemical containing activities against faults and leaks.
  - Immediate rehabilitation of an affected area.
  - Suitable disposal of contaminated soil.

- Reduction of noise levels.
  - Undue noise levels will be kept to acceptable hours.
  - Modification of equipment to reduce noise levels.
  - Aim to keep noise levels within the approved prescribed standards.

- Minimization of dust upliftment causing loss of air quality.
  - Watering of the dirt roads and vegetation cleared areas.
  - Adherence to speed limits.

- Waste disposal
  - Implementation of waste disposal facilities
  - Contractual agreements for waste removal.
  - Waste removal schedules,
  - Compliance to good housekeeping rules.

- Environmental awareness training on
  - Fauna and Flora
  - Proper waste management
  - Specific work related safety awareness

13 Aspects for inclusion as conditions of Authorization

(Any aspects which must be made conditions of the Environmental Authorization)

At this stage all aspects that must be included into the environmental authorization are detailed in this document. Should any aspects arise that needs to be made conditions this document will be updated accordingly and will be submitted to all relevant departments.

14 Description of any assumptions, uncertainties and gaps in knowledge

(Which relate to the assessment and mitigation measures proposed)

Any assumptions, uncertainties and gaps in knowledge that could arise during the operation of the prospecting activities will be addressed and mitigation measures implemented to prevent any damage to the environment. Such assumptions, uncertainties and gaps in knowledge will be described, implemented and submitted to all the relevant departments.

To prevent any unnecessary assumptions, uncertainties and gaps in knowledge, the Basic Environmental Assessment part of this document should not be read alone, as it only contain impact assessment with summarized management options, but rather read as a whole with the Environmental Management Programme, which include detailed management measures for each listed activity as described in the Basic Environmental Assessment.

15 Reasoned opinion as to whether the proposed activity should or should not be authorized

15.1 Reasons why the activity should be authorized or not

The proposed prospecting operations should be strongly considered for authorization as mine development will result in the upliftment of local communities, economic growth of the town, region as possible province.

15.2 Conditions that must be included in the authorization

15.2.1 Specific conditions to be included into the compilation and approval of EMPr

Specific conditions to be included into the compilation and approval of the BAR/EMPr are the adherence to all mitigation measures as stipulated within the BAR/EMPr.

15.1.2 Rehabilitation requirements.

Rehabilitation Requirements should include, but is not limited to the following:

- The area must be rehabilitated as close as possible to its original natural state as possible.
- Rehabilitation must be done to the complete satisfaction of all relevant departments and land owners
  .
- A two year monitoring programme must be implemented to ensure the success of vegetation re-establishment and the elimination of invader plant species.
- All other rehabilitation measures as contained within the EMPr, mitigation measures inclusive, must be adhered to or a grounded reason for why any of these could not be met.

16 Period for which the Environmental Authorization is required

The period applied for during the application phase is 2 years as legislatively required and requires Environmental Authorization for the latter period.

17 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 Director, Mosimanegape M Setlogelo, 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 Report.

18 Financial Provision

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

CALCULATION OF THE QUANTUM

Applicant: DNA RESOURCES (PTY) LTD

Location: ENGELDEWILGEBOOMFONTEIN
Date: SEPTEMBER 2021

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		R 18.42	1	1	R -
2 (A)	Demolition of steel buildings and structures	m2		R 256.63	1	1	R -
2(B)	Demolition of reinforced concrete buildings and structures	m2		R 378.15	1	1	R -
3	Rehabilitation of mine roads	m2		R 45.92	1	1	R -
4 (A)	Demolition and rehabilitation of electrified railway lines	m		R 445.73	1	1	R -
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m		R 243.13	1	1	R -
5	Demolition of housing and/or administration facilities	m2		R 513.26	1	1	R -
6	Opencast rehabilitation including final voids and ramps	ha		R 261 224.38	1	1	R -
7	Sealing of shafts adits and inclines	m3		R 137.77	1	1	R -
8 (A)	Rehabilitation of overburden and spoils	ha		R 179 372.28	1	1	R -
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha		R 223 404.93	1	1	R -
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		R 648 873.81	1	1	R -
9	Rehabilitation of subsided areas	ha	0.09	R 150 197.24	1	1	R 13 517.75
10	General surface rehabilitation	ha	0.18	R 142 093.10	1	1	R 25 576.76
11	River diversions	ha		R 142 093.10	1	1	R -
12	Fencing	m		R 162.08	1	1	R -
13	Water management	ha		R 54 027.79	1	1	R -
14	2 to 3 years of maintenance and aftercare	ha	1.8	R 18 909.73	1	1	R 34 037.51
15 (A)	Specialist study	Sum				1	R -
15 (B)	Specialist study	Sum				1	R -
					Sub Total 1		R 73 132.02

1	Preliminary and General	R 8 775.84	weighting factor 2 / 1	R	8 775.84
2	Contingencies	R 7 313.20		R	7 313.20
			Subtotal 2	R	89 221.07
			VAT (15%)	R	13 383.16
			Grand Total	R	**102 604.23**

Taking the type of prospecting activities, amount of drill holes to be drilled as well as that the drill vehicle will stay stationary and not travel in and out of the project area on a daily basis with the using of existing roads into consideration the total anticipated footprint of the access road will be at a minimum. The calculated financial provision proposed that a total amount of **R 102 604.23** is found sufficient by the Department of Mineral Resources.

18.1 Explain how the aforesaid amount was derived

As seen from the above table the amount of R102 604.23 was calculated using the Department of Mineral Resources' approved Financial Provision Quantum Calculation table. The calculated financial provision is proposed that a total amount of **R 102 604.23** is found sufficient by the Department of Mineral Resources.

18.2 Confirm that this amount can be provided from operation 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)

The above stated amount can be provided from, as part of, the 1st years operating expenditure and is in the submitted Prospecting Work Programme anticipated as an operating cost and was provided for as such.

19 Specific Information required by the competent Authority

19.1 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 BEA report must include the:-

19.1.1 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, attached the investigation report as an **Appendix**)

The land use in the area is livestock grazing and due to the small extends of the prospecting operation it is foreseen that there will be little to no impact on productivity. Any mining operations development as a result of the prospecting operations will however to some extent a negative impact on the socio-economic environment in the form of skills development and job creation.

Indirect impacts are more positive towards the community and towns due to Capital Expenditures during the prospecting activities resulting in a direct income into the town.

19.1.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the result 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 the Act.)

The prospecting will mainly consist of non-invasive work with limited drilling and is not foreseen that any heritage resources will be impacted/destroyed during the operations.

Should any fossils, historic artefacts and/or heritage significant objects be discovered and/or unearthed in the process of prospecting, the Prospecting Right holder will contact a South African Museum or University which employs the necessary specialists for the necessary studies and/or salvage operations can take place.

20 Other matter required in terms of sections 24(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 compiler of this document, also the appointed EAP, has some desktop knowledge of the area on which the proposed project is situated. An extensive field visit for investigation could not be executed, but an in depth desktop study was conducted using existing literature and data base knowledge acquired over the years.

No reasonable or feasible alternatives could be identified during the impact assessment process. The activities were already designed to cause the minimal disturbance possible with the best possible prospecting results.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft environmental management programme

1.1 Details of the EAP

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, Section 1.1 herein as required.)

The details and expertise of the Environmental Assessment Practitioner are already included in Part A Section 1.1 of this document, but also included below.

Details of the EAP

Name of the Practitioner:	Lindie Wiehahn
Address:	19 Park Road, Belgravia, Kimberley, 8301
Tel no:	072141 4164
Mobile:	072 141 4164
Fax No:	086 415 7897
e-mail address:	lindie@liwico.co.za
IAIAsa:	Lindie Wiehahn 5537

The qualification of the EAP

Current qualifications in this field were obtained through short courses at the University of Potchefstroom, which is the following:

- Introduction to Environmental Management (2002)
- Environmental Impact Assessment (2002)
- The Legal Framework for Managing Water in South Africa (2002)

Summary of the EAP's past experience.

(In carrying oath the Environmental impact Assessment Procedure)

During the year 2002 Lindie assisted with two Environmental Impact Assessments for a Golf Course development in Modder Rivier (today known as the Magersfontein Memorial Golf Course) and a Cottage development on the farm Avoca in the Douglas district. Later the same year she successfully completed her first sole Environmental Impact Assessment for the development of a filling station on the N12 at Warrenton.

Lindie was employed since then as an Environmental Consultant. Experiences obtained during these years were the drafting of Environmental Management Programmes, Environmental Management Programme Reports, Environmental Monitoring and Compliance Reports and Environmental Risk Reports. She also conducted several Environmental Impact Assessments for Mining Rights on La Reysstryd 53 IO, Lichtenburg (2004), Longlands, Barkly West (2004) and Lohatlha 673, Postmasburg (2009, 2011).

After the liquidation of Geo-Rock International, Lindie went into partnership with John H.R Loots till 2015. During these years she continued working as an Environmental Consultants and successfully an Environmental Impact Assessement on the farm Groot Derm 10, Alexanderbay (2012). From the year 2015 till date she undergone company name changes and is now consulting under LW Consultants.

1.2 Description of the Aspects of the Activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section 9 herein as required)

The description of the aspects of the activity are already covered in Part A Section 9 of this document, but also included below.

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, conveyers, etc...etc...etc.)	**POTENTIAL IMPACT** (E.g. dusts, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc.)	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated. (E.g. Construction, commissioning, operational, decommissioning, closure, post-closure.)	**SIGNIFINCANCE** If not mitigated	**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....	**SIGNIFICANCE** If mitigated
Non-invasive activities	Vegetation	Loss	Operational	Low	Restriction to existing roads	Low
	Geological	Loss		-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Low	Immediate rehabilitation	Low
	Grazing	Loss		Low	Restriction to existing roads	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction to roads	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Domestic waste handling	Low
	Fauna	Migration		-	-	-
	Water quality	Loss		-	-	-
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Speed restriction	Low
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		-	-	-
	Visual impact	Scenery loss		-	-	-
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		-	-	-

	Exposed area Rehab	Re-vegetation	After closure	-	-	-
	Safety risks	Waste disposal		Low	Closure standards	Positive
Drilling	Vegetation	Loss	Construction	Low	Vegetation clearing control	Low
	Geological	Loss	Operational	Medium	Rehabilitation	Low
	Topographic	Change		-	-	-
	Soil	Pollution		High	Immediate rehabilitation Continuous inspections Impervious sheet layout	Medium
	Grazing	Loss		Low	Rehabilitation Traffic restriction to roads	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction to roads Vegetation clearing control Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Removal of invader species Domestic waste handling	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Low	Area rehabilitation Adhere to mitigation measures	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Dampening of roads Speed restriction Dust filter during drilling	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Ablution	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		Medium	Facility maintenance Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Vegetation clearing control	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Removal of invaders	Low
	Fauna	Migration		-	-	-
	Water quality	Waste water		Medium	Waste water management Regular septic tank draining	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Watering of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Plant site	Vegetation	Loss	Construction	Forming part of the drilling site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Continuous inspections Chemical handling protocol	Low
	Grazing	Loss		-	-	-
	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		-	-	-
	Fauna	Migration		-	-	-
	Water quality	Storm water		Medium	Storm water management Adhere to mitigation measures	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Low	Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Chemical storing	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Continuous inspections Chemical handling protocol	Low
	Grazing	Loss		-	-	-

	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		-	-	-
	Fauna	Migration		-	-	-
	Water quality	Storm water		-	-	-
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Medium	Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Vehicle parking	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		High	Regular inspections Immediate rehabilitation Drip-tray installation	Medium
	Grazing	Loss		Low	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Removal of invaders Domestic waste management	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Medium	Adhere to mitigation measures Soil pollution management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Damping of exposed area.	Low

	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Invader plant removal	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Diesel storage	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Regular inspections Immediate rehabilitation Impervious sheet layout Regular maintenance	Low
	Grazing	Loss		Low	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Low	Traffic restriction	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna	Migration		-	-	-
	Water quality	Storm water		Medium	Soil pollution management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Dampening of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Avoid significant sensitive sites Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	-	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

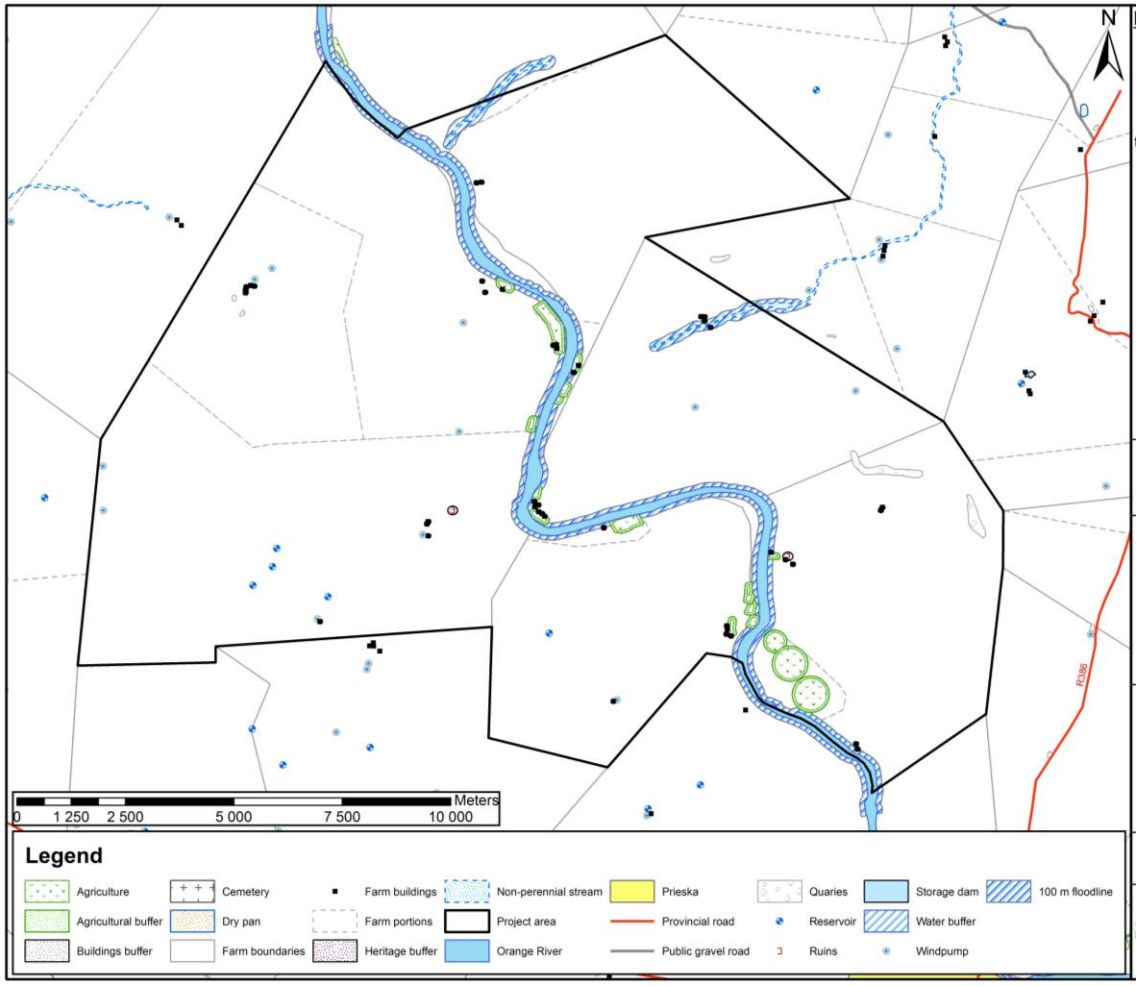
Domestic waste	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures		
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil / Litter	Pollution		Medium	Immediate clean-up Continuous inspections	Low
	Grazing	Loss		-	-	-
	Vegetation	Loss/disturbance		-	-	-
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna	Migration		Low	Adhere to mitigation measures Immediate clean-up	Low
	Water quality	Storm water		-	-	-
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Medium	Adhere to mitigation measures Waste management	Low
	Visual impact	Scenery loss		Medium	Waste management Litter pollution management	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Access road and drill traverses	Vegetation	Loss	Construction	Medium	Use of existing road Vegetation clearing control Minimum roads possible	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		Medium	Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Restrictions to roads Rehabilitation	Low

	Vegetation	Loss/disturbance		Low	Restriction to roads Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Continuous inspections	Low
	Fauna	Migration		Low	-	Low
	Water quality	Storm water		Medium	Storm water control Erosion control Soil pollution management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Low	Damping of mine roads. Speed restriction	Low
	Archaeological items	Loss		High	Avoid sites of significance Restriction to roads	-
	Sensitive landscape	Destruction		Low	Avoid significant sensitive sites Adhere to mitigation measures Rehabilitation	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspection	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspection Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

1.3Composite Map

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

A complete and accurate Composite map cannot be drafted and provided at this stage as final borehole locations can only be determined after Phase 1 prospecting activities. Attached is the Buffer Zone plan which will be used in the positioning of the boreholes before commencement of the drilling operations.



1.4Description of Impact management objectives including management statements

1.4.1 Determination of closure objectives

(Ensure that the closure objectives are informed by the type of environment described)

The sole determined objective is to rehabilitate the area during and after prospecting activities to such an extent that the post-prospected environment is almost in the same condition as the original undisturbed environment.

When rehabilitation proves successful the vegetation re-growth must be of such quality that this area can be used as a grazing field for farm livestock (as is currently the case).

1.4.2 Volumes and rate of water use required for the operation

The drilling operations requires little to no water use for its operations. The only water needed during this process is for consumption and will be obtained in town on a daily basis.

Other related activities such as the ablution facilities do require water, but the amount of water needed are still unknown. Currently it is investigated that the contracted company supplying and maintaining this facility also provide the sufficient water, with its chemicals, in approved JoJo tanks on a regular basis.

1.4.3 Has a water use license has been applied for?

A water use license has not been applied for as the drill contractors will be responsible for the supply of the water necessary.

Other prospecting related activities such as the ablution facilities do require the use of water, but the amount of water needed are still unknown at this stage. Currently it is investigated that the contracted company supplying and maintaining this facility also provide the sufficient water, with its chemicals, on a regular basis.

1.4.4 Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES (As listed in 2.11.1)	PHASE of operation in which activity will take place. State: Planning and design, Pre-construction, Construction, Operational, rehabilitation, Closure, Post closure	SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m^2)	MITIGATION MEASURES (describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation therefore state either:- Upon cessation of the individual activity Or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be
Non-invasive activities	Operational	20 234.3746 ha	• On accidental spillage the contaminated soil will be removed and appropriately disposed of	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Preventing unnecessary stress in animals, loss of life and/or employee injury	• Integrated into activity
			• Strict adherence to the farm roads and no off-road driving to prevent trampling of vegetation and ground compaction	• Avoiding vegetation loss and ground compactions, which can lead to ground erosion	• Integrated into activity

			• Littering of any product, including cigarette buds will not be tolerated • The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers. • The mine shall ensure that all vehicle and contractors are aware of procedures and restrictions in terms of this document.	• Avoid possible animal suffering and scenery degradation • With all measures in place the mine is still ultimately responsible for environ-mental conservation • Forming part of the mine's Environmental Awareness initiative and strategies	• Integrated into activity • Integrated into activity • Decommissioning of activity • Commencement of activity
Drilling	Construction	Total: >1.8 ha Per hole: 0.09 ha	• Only necessary vegetation will be cleared • On vegetation clearing should any nests with chicks or eggs be discovered a local nature conservation officer shall be called to relocate the species • All infrastructure will be equipped with appropriate signs indicating function and potential dangers • A qualified archeologist must monitor site establishment	• Minimizing unnecessary vegetation loss • Promote animal conser-vation in minimizing loss of animal life • Health and Safety objective in preventing injury to personnel and/or public individuals • Avoiding the destruction of any objects and/or structures of Archaeological and/or cultural significance	• Commencement of activity • Commencement of activity • Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity

			• Drip-tray installation on drill vehicles	• Avoiding hydro-carbon fluid spillage causing soil sterilization	• Commencement of activity • Integrated into activity
			• Impervious sheet layout under drill rig.	• Avoid hydro-carbon fluid spillage causing soil sterilization	• Commencement of activity • Integrated into activity
	Operational		• No vehicle repairs and maintenance will occur within the operational area as far as possible.	• Avoid hydro-carbon fluid spillage and ground sterilization	• Integrated into activity • Decommissioning of activity
			• Old diesel and related chemicals must be discarded within appropriate marked closed containers	• Avoiding hydro-carbon fluid spillage as far as possible	• Integrated into activity • Decommissioning of activity
			• On accidental spillage the contaminated soil will be removed and appropriately stored till the removal there off.	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity • Decommissioning of activity
			• The area must be continuously inspected for spillages and remediated immediately	• Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• All vehicle traffic are restricted to the roads and demarcated traffic areas	• Avoiding vegetation loss and ground compaction, which can lead to ground erosion	• Commencement of activity • Integrated into activity

			• No indigenous shrubs or trees will unnecessarily be uprooted and never to be used for fire wood	• Minimizing unnecessary vegetation loss and preservation of species	• Commencement of activity • Integrated into activity
			• Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Preventing unnecessary stress in animals, loss of life and/or employee injury	• Commencement of activity • Integrated into activity • Decommissioning of activity
			• The mine shall be responsible for compliance with the relevant legislation in respect to noise.	• Minimizing noise disturbance having an impact on farm owners and fauna	• Integrated into activity
			• Hearing protection will be made available to all employees where attenuation cannot be implemented.	• Health and Safety requirement preventing hearing loss of employees	• Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying water when necessary.	• Health and Safety as well as NEMA requirement ensuring good air quality and preventing related lung illnesses	• Integrated into activity
			• Littering of any product, including cigarette buds, at any operational site shall be seen as an offence and will not be tolerated	• Avoid possible animal suffering and scenery degradation	• Commencement of activity • Integrated into activity • Decommissioning of activity

			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place, the mine is still ultimately responsible for environmental conservation	• Integrated into activity • Decommissioning of activity
			• The mine shall ensure that all vehicle and contractors are aware of procedures and restrictions in terms of this document.	• Forming part of the mine's Environmental Awareness initiative and strategies	• Commencement of activity • Integrated into activity
			• Fire extinguishers will be kept in good order and serviced regularly.	• Preventing fires that may lead to run-away field fires causing severe vegetation loss over vast areas	• Integrated into activity
			• Hard hats, earplugs, safety glasses, dust masks, gloves, hard point boots, reflector vests and reflective overalls is compulsory before entering this area.	• Health and Safety requirement preventing employee injury and/or possible loss of life	• Commencement of activity • Integrated into activity
			• The entrance will be clearly marked with all regulatory signs, to indicate a potential dangerous zone.	• Health and Safety as well and Mineral Act requirement preventing public individual injury	• Commencement of activity
			• Related waste/ scrap must be dispose of in the appropriate manner	• Waste management standard preventing fauna and/or human injury as well as environmental degradation	• Integrated into activity • Decommission of activity

	Decommissioning		• The drill hole will be cased and sealed according rehabilitation standards	• Environmental closure objective to create a sustainable environment after operations	• Integrated into activity • Decommissioning of activity
			• All chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation re-growth	• Decommissioning of activity
			• Regular inspection for the removal of invader species.	• Managing vegetation re-growth and promoting indigenous species establishment	• Integrated into activity • Decommissioning of activity • Closure of activity
	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Ablution	Construction		Forming part of the drill site footprint as part of prospecting related activities and structures		
			• Only necessary vegetation will be cleared	• Minimizing unnecessary vegetation loss	• Commencement of activity
			• On vegetation clearing should any nests with chicks or eggs be discovered a local nature conservation officer shall be called to relocate the species	• Promote animal conser-vation in minimizing loss of animal life	• Commencement of activity

			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing unnecessary vegetation loss and preservation of species	• Commencement of activity
			• Concealed septic tanks must be installed above ground, where it can be regularly inspected for leakage	• For the ease of maintenance and leakage can be seen immediately	• Commencement of activity
	Operational		• Ablution blocks shall be at all times be sanitized	• Health and Safety issue, avoiding the spread of human diseases	• Commencement of activity • Integrated into activity
			• Sanitary bins will be provided and no sanitary material will be allowed within the septic tanks	• Preventing the burst of the septic tank as well as littered materials creating health risks	• Commencement of activity • Integrated into activity
			• All human waste and related waste will be contained within septic tanks installed for this purpose	• Promoting environmental health by avoiding the spread of diseases and parasites	• Integrated into activity
			• Septic tanks and chemical toilets will be chemically treated and maintained by a contracting agency	• Health and Safety related preventing spillage and ground contamination	• Integrated into activity
			• Sanitary material within the bins provided will be closed in colour plastics and disposed of as domestic waste or removed by the agency responsible for the facility	• Preventing littered materials creating health risks and separation from normal domestic wastes	• Integrated into activity • Decommissioning of activity

			• Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Preventing unnecessary stress in animals, loss of life and/or employee injury	• Integrated into activity
			• Littering of any product, including cigarette buds shall be seen as an offence and will not be tolerated	• Avoid possible animal suffering and unnecessary environmental degradation	• Integrated into activity
			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place, the mine is still ultimately responsible for environ-mental conservation	• Integrated into activity • Decommissioning of activity
			• The mine shall ensure that all suppliers and the delivery drivers are aware of procedures and restrictions in terms of this document.	• Forming part of the mine's Environmental Awareness initiative and strategies	• Commencement of activity • Integrated into activity
			• The entrance will be clearly marked with all regulatory signs	• Regulatory requirement to indicate structure function	• Commencement of activity
	Decommissioning		• All structures will be broken down and removed from site.	• Rehabilitation needs to be done to comply with closure objectives	• Decommissioning of activity
			• All spills will be rehabilitated immediately	• Prevent the degradation of environmental health	• Integrated into activity • Decommissioning of activity

			• Rip and rehabilitate all compacted areas. • Regular inspection for the removal of invader species.	• Remedying compacted areas to prevent erosion and promote vegetation re-growth • Managing vegetation re-growth and promoting indigenous species establishment	• Decommissioning of activity • Decommissioning of activity • Closure of activity
	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Plant site	Construction		Forming part of the drill site footprint as part of prospecting related activities and structures		
	Operational		• Old diesel and related chemicals must be discarded within appropriate marked closed containers • On accidental spillage the contaminated soil will be removed and appropriately stored till the removal there off. • The area must be continuously inspected for spillages and remediated immediately	• Avoiding hydro-carbon fluid spillage as far as possible • Avoid ground sterilization and/or disturbance of vegetation re-growth • Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • Integrated into activity

			• Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Preventing unnecessary stress in animals, loss of life and/or employee injury	• Commencement of activity • Integrated into activity • Decommissioning of activity
			• The mine shall be responsible for compliance with the relevant legislation in respect to noise.	• Minimizing noise disturbance having an impact on farm owners and fauna	• Integrated into activity
			• Hearing protection will be made available to all employees where attenuation cannot be implemented.	• Health and Safety requirement preventing hearing loss of employees	• Integrated into activity
			• Littering of any product, including cigarette buds, at any operational site shall be seen as an offence and will not be tolerated	• Avoid possible animal suffering and scenery degradation	• Commencement of activity • Integrated into activity • Decommissioning of activity
			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place, the mine is still ultimately responsible for environ-mental conservation	• Integrated into activity • Decommissioning of activity
			• Fire extinguishers will be kept in good order and serviced regularly.	• Preventing fires that may lead to run-away field fires causing severe vegetation loss over vast areas	• Integrated into activity

			• Hard hats, earplugs, safety glasses, dust masks, gloves, hard point boots, reflector vests and reflective overalls is compulsory before entering this area.	• Health and Safety requirement preventing employee injury and/or possible loss of life	• Commencement of activity • Integrated into activity
			• The entrance will be clearly marked with all regulatory signs, to indicate a potential dangerous zone.	• Health and Safety as well and Mineral Act requirement preventing public individual injury	• Commencement of activity
			• Related waste/ scrap must be dispose of in the appropriate manner	• Waste management standard preventing fauna and/or human injury as well as environmental degradation	• Integrated into activity • Decommission of activity
	Decommissioning		• All chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation re-growth	• Decommissioning of activity
			• Regular inspection for the removal of invader species.	• Managing vegetation re-growth and promoting indigenous species establishment	• Integrated into activity • Decommissioning of activity • Closure of activity

	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Chemical storage	Construction		Forming part of the drill site footprint as part of prospecting related activities and structures		
	Operational		• Stored chemicals must be in marked closed containers	• Chemical storing protocol, indicating danger and remediation steps	• Commencement of activity • Integrated into activity
			• For remediation purposes a neutralizing agent for each chemical must be available at all times	• Minimizing soil loss to neutralize rather than remove	• Commencement of activity • Integrated into activity
			• Un-used chemicals must be separated from used chemicals as well as each type of chemical will be group to prevent cross-contamination	• Avoid fire hazard as some chemicals may react with each other	• Commencement of activity • Integrated into activity
			• Chemicals removed from storage will be in approved containers to minimize the possibility of spillage	• Prevent spillage and ground contamination	• Integrated into activity
			• Fire extinguishers for this purpose will be available at all times	• Preventing fires that may lead to run-way field fires causing severe vegetation loss over vast areas	• Integrated into activity

			• Chemical and chemical containing waste will be stored in closed containers. • The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers. • The mine shall ensure that all suppliers and the delivery drivers are aware of procedures and restrictions in terms of this document.	• Chemical handling protocol avoiding spillage and ground contamination • With all measures in place, the mine is still ultimately responsible for environ-mental conservation • Forming part of the mine's Environmental Awareness initiative and strategies	• Integrated into activity • Integrated into activity • Decommissioning of activity • Commencement of activity • Integrated into activity
	Decommissioning		• With decommissioning of the mine the contractor is responsible for removing his own chemical products. • All chemical spills will be rehabilitated immediately	• Avoiding environmental contamination also reha-bilitation requirement in complying with closure objective • Avoid ground sterilization and/or disturbance of vegetation re-growth	• Decommissioning of activity • Integrated into activity • Decommissioning of activity
	After closure				
Vehicle storage	Construction		Forming part of the drill footprint as part of prospecting related activities and structures		
	Operational		• Drip pans will be readily available and no parked vehicle will be without a drip pan.	• Avoiding hydro-carbon fluid spillage causing soil sterilization	• Commencement of activity • Integrated into activity

			• No vehicle repairs and maintenance will occur within the operational area as far as possible.	• Preventing hydro-carbon fluid spillage and scattered waste materials	• Integrated into activity
			• Old diesel and related chemicals must be discarded within appropriate marked close containers	• Avoiding hydro-carbon fluid spillage as far as possible	• Integrated into activity • Decommissioning of activity
			• On accidental spillage the contaminated soil will be removed and appropriately stored till the removal there off.	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• The area must be continuously inspected for spillages and remediated immediately	• Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying water when necessary.	• Preventing and/or minimizing dust upliftment protecting the air quality as far as possible	• Integrated into activity
			• Littering of any product, including cigarette buds shall be seen as an offence and will not be tolerated	• Avoid possible animal suffering and scenery degradation	• Integrated into activity

			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place it is still the mine's ultimate responsibility in regard to environmental conservation	• Integrated into activity • Decommissioning of activity
			• The mine shall ensure that all suppliers and the delivery drivers are aware of procedures and restrictions in terms of this document.	• Forming part of the mine's Environmental Awareness initiative and strategies	• Commencement of activity • Integrated into activity
			• Fire extinguishers will be kept in good order and serviced regularly.	• Preventing fires that may lead to run-away field fires causing severe vegetation loss over vast areas	• Commencement of activity • Integrated into activity
	Decommissioning		• All chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation re-growth	• Decommissioning of activity
			• Regular inspection for the removal of invader species.	• Managing vegetation re-growth and promoting indigenous species establishment	• Decommissioning of activity • Closure of activity

	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Diesel storage	Construction		Forming part of the drill site footprint as part of prospecting related activities and structures		
			• Diesel cart and tank will be equipped a leak-proof bay, supporting the tank volume plus 10%.	• Avoiding hydro-carbon fluid spillage causing ground sterilization that can lead to erosion	• Commencement of activity
			• Will stand on a impervious sheet	• Further fluid spillage prevention	• Commencement of activity • Integrated into activity
	Operational		• Vehicles which are filled with fuel will park on a plastic sheet / floor for if any spillage occurs it can be cleaned	• Avoid hydro-carbon fluid spillage as far as possible causing ground sterilization	• Integrated into activity
			• Two fire extinguishers will be present at all times	• Preventing fires that may lead to run-away field fires causing sever vegetation loss over vast areas	• Commencement of activity • Integrated into activity
			• The area must be continuously inspected for spillages and remediated immediately	• Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity

			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers. • The mine shall ensure that all suppliers and the delivery drivers are aware of procedures and restrictions in terms of this document. • Fire extinguishers will be kept in good order and serviced regularly.	• With all measures in place the mine is still ultimately responsible for environ-mental conservation • Forming pat of the mine's Environmental Awareness initiative and strategies • Preventing fires that may lead to run-away field fires causing sever vegetation loss over vast areas	• Integrated into activity • Decommissioning of activity • Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity
	Decommissioning		• All chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation re-growth	• Integrated into activity • Decommissioning of activity
	After closure				
Domestic Waste	Construction		Forming part of the drill site footprint as part of prospecting related activities and structures		
	Operational		• Domestic waste will be kept in closed marked containers. • Containers will be removed on a daily and/or weekly basis. • Domestic waste will be dumped at a registered site for such disposal.	• Avoid windblown litter and/or protection against scavengers • Waste handling protocol in keeping the environment clean • Waste management protocol in preventing unnecessary litter pollution	• Commencement of activity • Integrated into activity • Integrated into activity • Integrated into activity • Decommissioning of activity

			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place it is still the mine's responsibility to ensure environmental conservation	• Integrated into activity • Decommissioning of activity
	Decommissioning		• With decommissioning of the mine the contractors and mine employees will be responsible for the safe removal thereof.	• Avoiding litter pollution also rehabilitation requirement in complying with closure objective	• Integrated into activity • Decommissioning of activity
	After closure				
Access road and drill traverses	Construction	<0.4 ha	• As far as possible will it be made use of existing farm roads	• Avoid unnecessary environ-mental disturbance and vegetation loss	• Commencement of activity
			• Only when utmost necessarily will farm tracks be made.	• Avoid unnecessary environmental disturbance and vegetation loss	• Commencement of activity • Integrated into activity
			• No foreign materials will be used in the construction of roads	• Eliminate excessive reha-bilitation cost as all foreign materials must be removed	• Commencement of activity
			• The only necessary vegetation will be cleared	• Minimizing unnecessary vegetation loss	• Commencement of activity • Integrated into activity
			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing unnecessary vegetation loss and the preservation of species	• Commencement of activity • Integrated into activity
	Operational		• The roads must be continuously inspected for spillages and remediated immediately	• Minimize the probability of soil pollution, ground sterilization and/or distur-bance of vegetation re-growth	• Integrated into activity

			• All vehicle traffic are restricted to the roads and demarcated traffic areas	• Avoiding vegetation loss and ground compaction, which can lead to ground erosion	• Integrated into activity
			• No indigenous shrubs or trees will unnecessarily uprooted and used for fire wood	• Minimizing unnecessary vegetation loss and the preservation of species	• Commencement of activity • Integrated into activity
			• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended.	• Managing vegetation conservation in preventing the growth of invader species	• Integrated into activity • Decommissioning of activity
			• Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Preventing unnecessary stress in animals. Loss of life and/or employee injury	• Commencement of activity • Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying of water when necessary	• Preventing and/or minimizing dust upliftment protecting the air quality as far as possible	• Integrated into activity
			• Littering of any product, including cigarette buds, at any operational site shall be seen as an offence and will not be tolerated	• Avoid possible animal suffering and scenery degradation	• Integrated into activity
			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• With all measures in place the mine is still ultimately responsible for environmental conservation	• Integrated into activity • Decommissioning of activity

	Decommissioning		• All chemical spills will be rehabilitated immediately • Rip and rehabilitate all compacted areas. • Regular inspection for the removal of invader species.	• Avoid ground sterilization and/or disturbance of vegetation re-growth • Remedying compacted areas to prevent erosion and promote re-growth • Managing vegetation re-growth and promoting indigenous species esta-blishment	• Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • Decommissioning of activity • Closure of activity
	After closure		• A 2 year after care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity

OTHER MITIGATION MEASURES NOT LISTED WITH LISTED ACTIVITIES

- Personnel will need to be trained on health and safety matters in line with the Health and Safety Act for mining and in the handling and remediation of chemical spills, fire and first aid
- Daily checking of oil/diesel leakages before any vehicle is operated
- Waste storage containers shall be covered, tip-proof, weather proof and scavenger proof
- The mine shall ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter
- No burning, on site burning or dumping of waste shall occur
- Access road maintenance throughout the entire project timeframe
- All mine roads will be ripped to loosen the ground for vegetation re-growth for rehabilitation purposes
- A complaints register must be implemented and issues raised must be addressed in a scheduled meeting with all relevant interested and//or affected parties.

1.5 Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ()

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, conveyers, etc... etc.... etc.).	**POTENTIAL IMPACT** (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc... etc... etc.	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	**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 • Controlling through management and monitoring • Remedy through rehabilitation.	**STANDARDS TO BE ACHIEVED** (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Non-invasive activity	Vegetation	Loss	Operational	Restrictions to existing roads	Impact avoided
	Geological	Loss		-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate rehabilitation	Impact remedied
	Grazing field	Loss		Restrictions to existing roads	Impact avoided
	Vegetation	Los / disturbance		Traffic restriction to roads	Impact avoided
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste handling	Impact avoided
	Fauna	Migration		-	-
	Water quality	Loss		-	-
	Noise	Elevated levels		Operations during office hours	Impact minimized
	Air quality	Degradation		Speed restrictions	Impact minimized
	Archaeological items	Loss		-	-
	Sensitive landscape	Destruction		-	-
	Visual impact	Scenery loss		-	-

	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		-	-
	Area rehabilitation	Re-Vegetation	After closure	-	-
	Safety risks	Waste Disposal		Closure standards	Impact remedied
Drilling	Vegetation	Loss	Construction	Vegetation clearing control	Impact minimized
	Geological	Loss	Operational	Rehabilitation	Impact minimized
	Topographic	Change		-	-
	Soil	Pollution		Immediate rehabilitation Continuous inspections Impervious sheet layout	Impact remedied Impact managed Impact avoided
	Grazing field	Loss		Rehabilitation Traffic restriction to roads	Impact remedied Impact avoided
	Vegetation	Los / disturbance		Traffic restriction to roads Vegetation clearing control Rehabilitation	Impact avoided Impact minimized Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Removal of invader species Domestic waste handling	Impact minimized Impact avoided
	Fauna	Migration		-	-
	Water quality	Storm water		Area rehabilitation Adhere to mitigation measures	Impact avoided Impact mitigated
	Noise	Elevated levels		Operations during office hours	Impact minimized
	Air quality	Degradation		Dampening of roads Speed restriction Dust filter during drilling	Impact minimized Impact minimized Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Avoid sites of significance Adhere to mitigation measures	Impact avoided Impact mitigated
	Visual impact	Scenery loss		-	-

	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied
Ablution	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Facility maintenance Immediate rehabilitation Regular inspections	Impact avoided Impact remedied Impact managed
	Grazing field	Loss		Rehabilitation Restriction to cleared areas	Impact remedied Impact avoided
	Vegetation	Los / disturbance		Restriction to cleared areas Vegetation clearing control	Impact avoided Impact minimized
	Water table	Depressed		-	-
	Vegetation	Invader plants		Removal of invaders	Impact managed
	Fauna	Migration		-	-
	Water quality	Waste water		Waste water management Regular septic tank draining	Impact managed Impact managed
	Noise	Elevated levels		-	-
	Air quality	Degradation		Watering of exposed area	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Avoid significant sensitive sites Adhere to mitigation measures	Impact avoided Impact mitigated
	Visual impact	Scenery loss		-	-

	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied
Plant site	Vegetation	Loss	Construction	Forming part of the drilling footprints as part of prospecting related activities and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate rehabilitation Continuous inspection Chemical handling protocol	Impact remedied Impact managed Impact avoided
	Grazing field	Loss		-	-
	Vegetation	Los / disturbance		-	-
	Water table	Depressed		-	-
	Vegetation	Invader plants		-	-
	Fauna	Migration		-	-
	Water quality	Storm water		Storm water management Adhere to mitigation measures	Impact avoided Impact managed
	Noise	Elevated levels		Operations within office hours	Impact minimized
	Air quality	Degradation		-	-
	Archaeological items	Loss		-	-
	Sensitive landscape	Destruction		Adhere to mitigation measures	Impact mitigated
	Visual impact	Scenery loss		-	-
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards

	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied
Chemical storing	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate rehabilitation Continuous inspection Chemical handling protocol	Impact remedied Impact managed Impact avoided
	Grazing field	Loss		-	-
	Vegetation	Los / disturbance		-	-
	Water table	Depressed		-	-
	Vegetation	Invader plants		-	-
	Fauna	Migration		-	-
	Water quality	Storm water		-	-
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		-	-
	Sensitive landscape	Destruction		Adhere to mitigation measures	Impact mitigated
	Visual impact	Scenery loss		-	-
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied

Vehicle parking	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Regular inspections Immediate rehabilitation Drip-tray installation	Impact managed Impact remedied Impact avoided
	Grazing field	Loss		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Vegetation	Los / disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Removal of invaders Domestic water management	Impact minimized Impact avoided
	Fauna	Migration		-	-
	Water quality	Storm water		Adhere to mitigation measures Soil pollution management	Impact mitigated Impact avoided
	Noise	Elevated levels		Operations within office hours	Impact minimized
	Air quality	Degradation		Dampening of exposed area	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Avoid significant sensitive sites Adhere to mitigation measures	Impact avoided Impact mitigated
	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Invader plant removal	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied

Diesel storage	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related actives and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Regular inspections Immediate rehabilitation Impervious sheet layout Adhere to mitigation measures	Impact managed Impact remedied Impact avoided Impact mitigated
	Grazing field	Loss		Rehabilitation Restriction to cleared areas	Impact remedied Impact avoided
	Vegetation	Los / disturbance		Traffic restriction	Impact avoided
	Water table	Depressed		-	-
	Vegetation	Invader plants		Removal of invaders	Impact minimized
	Fauna	Migration		-	-
	Water quality	Storm water		Soil pollution management	Impact avoided
	Noise	Elevated levels		-	-
	Air quality	Degradation		Dampening of exposed area	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Avoid significant sensitive sites Adhere to mitigation measures	Impact avoided Impact mitigated
	Visual impact	Scenery loss		-	-
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection	Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied

Domestic waste	Vegetation	Loss	Construction	Forming part of the drill site footprint as part of prospecting related activities and structures	
	Geological	Loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate clean-up Continuous inspections	Impact remedied Impact managed
	Grazing field	Loss		-	-
	Vegetation	Los / disturbance		-	-
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal	Impact minimized
	Fauna			Adhere to mitigation measures Immediate clean-up	Impact mitigated Impact remedied
	Water quality	Storm water		-	-
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		-	-
	Sensitive landscape	Destruction		Adhere to mitigation measures Waste management	Impact mitigated Impact remedied
	Visual impact	Scenery loss		Waste management Litter pollution management	Impact avoided Impact managed
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards
	Area rehabilitation	Re-Vegetation	After closure	Regular inspection	Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied

Access road and drill traverses	Vegetation	Loss	Construction	Use of existing road Vegetation clearing control Minimum roads possible	Impact avoided Impact minimized Impact avoided
	Geological	Loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Immediate rehabilitation Regular inspections	Impact remedied Impact managed
	Grazing field	Loss		Restriction to roads Rehabilitation	Impact avoided Impact remedied
	Vegetation	Los / disturbance		Restriction to roads Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal Continuous inspections	Impact minimized Impact managed
	Fauna	Migration		-	-
	Water quality	Storm water		Storm water control Erosion control Soil pollution management	Impact minimized Impact managed Impact avoided
	Noise	Elevated levels		Operations within office hours	Impact minimized
	Air quality	Degradation		Dampening of mine roads Speed restriction	Impact minimized Impact minimized
	Archaeological items	Loss		Avoid sites of significance Restriction to roads	Impact avoided Impact avoided
	Sensitive landscape	Loss		Avoid significant sensitive sites Adhere to mitigation measures Rehabilitation	Impact avoided Impact mitigated Impact remedied
	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspection	Rehabilitation standards

	Area rehabilitation	Re-Vegetation	After closure	Regular inspection Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste Disposal		Closure standards	Impact remedied

1.6 Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplate in paragraphs (1.3) and (1.4) will be achieved)

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, conveyers, etc... etc.... etc.)..	POTENTIAL IMPACT (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc... etc... etc.	MITIGATION TYPE (modify, remedy, control, or stop) Through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. • Modify through alternative method • Control through noise control • Controlling through management and monitoring • Remedy through rehabilitation.	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation therefore state either:- Upon cessation of the individual activity Or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12.and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Non-invasive activities	Vegetation loss	Restriction to roads	Integrated into the activity	Prevents the trampling of vegetation and compaction of ground
	Geological change	-	-	-
	Topographical change	-	-	-
	Soil pollution	Immediate Rehabilitation	Integrated into the activity Decommissioning of activity	Prevents the sterilization of soil by hydro-carbon fluids

	Grazing loss	Restriction to existing roads	Integrated into activity	Prevents the trampling of vegetation and compaction of ground
	Vegetation disturbance	Traffic restriction to roads	Integrated into the activity	Prevents the trampling of vegetation and compaction of ground
	Water table level	-	-	-
	Invader plants	Domestic waste handling	Integrated into activity	Prevents the unnecessary growth of invaders
	Fauna migration	-	-	-
	Water quality loss	-	-	-
	Noise disturbance	Operations within office hours	Integrated into the activity	Restricting the noise disturbance to acceptable hours to minimize the effect on the residing farm owners
	Air quality degradation	Speed restriction	Integrated into activity	Reduced speed will minimize dust upliftment influencing the air quality
	Archaeological items	-	-	-
	Sensitive landscape	-	-	-
	Visual impact	-	-	-
	Waste disposal	Management standards	Integrated into the activity Decommissioning of activity	Domestic and related waste should be contained as littering may lead to animal suffering and/or some fragile vegetation loss
	Re-vegetation	-	-	-
	Area rehabilitation	-	Closure standards	The area after operations should be in exactly the same condition as before operations. This can be done as this activity is regarded as non-invasive with minimal environmental impact

Drilling	Vegetation loss	Vegetation clearing control	Commencement of activity. Integrated into the activity	Only the necessary area should be cleared to avoid extensive vegetation loss.
	Geological change	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the impact in trying to rectify the disturbance
	Topographical change	-	-	-
	Soil pollution	Immediate rehabilitation Continuous inspections Impervious sheet layout	Commencement of activity Integrated into the activity Decommissioning of activity	Avoiding soil pollution as far as possible in order to prevent sterilization of the ground, vegetation loss and the possible impact on the animals and ground/surface waterbodies in the event of a storm water run-off
	Grazing loss	Rehabilitation Traffic restriction to roads	Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Traffic restriction to roads Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding, minimizing and/or rectifying the loss of vegetation. Where vegetation growth is hindered greater probability of erosion exists
	Water table level	-	-	-
	Invader plants	Removal of invader species Domestic waste handling	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the fragile indigenous species of the area
	Fauna migration	-	-	-
	Water quality loss (storm water)	Area rehabilitation Adhere to mitigation measures	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operation during office hours	Integrated into activity	Minimize the effect the noise created by the operations have on the community, animals and surrounding environment

	Air quality degradation	Dampening of cleared area Speed restriction Dust filter during drilling	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible.
	Archaeological items	Avoid sites of significance	Integrated into activity Commencement of activity	Avoiding the destruction of any structure of archaeological and/or cultural significance
	Sensitive landscape	Avoid significant sensitive sites Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	-	-	-
	Waste disposal	Management standards	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by scattered metals and other wastes
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Removal of invader species Closure standard	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas, removing invader species and ensuring the state of environment is as close as possible to the pre-prospected area.
Ablution	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological change	-	-	-
	Topographic change	Rehabilitation	Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity can prevent erosion channels forming degrading the natural topography

	Soil pollution	Facility maintenance Immediate rehabilitation Regular inspections	Integrated into activity Decommissioning of activity	Avoiding, minimizing and remedying of spillage preventing any health effect that spillage may have on the environment
	Grazing loss	Rehabilitation Restriction to cleared areas	Integrated into activity Decommissioning of activity Closure of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Restriction to cleared areas Vegetation clearing control	Commencement of activity Integrated into activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Water table level	-	-	-
	Invader plants	Removal of invaders	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the fragile indigenous species of the area
	Fauna migration	-	-	-
	Water quality loss (waste water)	Waste water management Regular septic tank draining	Commencement of activity Integrated into activity Decommissioning of activity	Waste management standards as all sewerage must be treated at a registered facility as well as avoiding the risk it poses in regard to environmental health
	Noise disturbance	-	-	-
	Air quality degradation	Watering of exposed area	Integrated into activity	Watering of the exposed area will deep the dust stable and prevent any windblown dust
	Archaeological items	Avoid sites of significance	Commencement of activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Avoid significant sensitive sites Adhere to mitigation measures	Commencement of activity Integrated into activity	Avoid the pollution, degradation and/or destruction of any significant sensitive landscapes
	Visual impact	-	-	-

	Waste disposal	Management standards	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by human excretions (sewerage) and related wastes
	Re-vegetation	Regular inspections	Decommissioning of activity. Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Removal of invader species Closure standards	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas, removing invader species and ensuring the state of environment is as close as possible to the pre-prospected area.
Plant site	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Minimize the unnecessary clearance of vegetation and minimizing overall prospecting footprint
	Geological change	-	-	-
	Topographic change	-	-	-
	Soil pollution	Immediate Rehabilitation Regular inspection Chemical handling control	Integrated into activity Decommissioning of activity	Avoiding and/or remedying soil pollution as far as possible in order to prevent sterilization of the ground, vegetation loss and the possible impact on the animals and ground/surface waterbodies in the event of storm water run-off
	Grazing loss	-	-	-
	Vegetation disturbance	-	-	-
	Water table level	-	-	-
	Invader plant	-	-	-
	Fauna migration	-	-	-

	Water quality loss (storm water)	Storm water management Adhere to mitigation measures	Commencement of activity Integrated into activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operations within office hours	Integrated into activity	Restricting the noise disturbance to acceptable hours to minimize the effect on the surrounding communities
	Air quality degradation	-	-	-
	Archaeological items	-	-	-
	Sensitive landscape	Adhere to mitigation measures	Commencement of activity Integrated into activity	Avoiding and minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	-	-	-
	Waste disposal	Management standards	Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by chemical or chemical containing waste
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Removal of invader species Closure standards	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas and ensuring the state of environment is as close as possible to the pre-prospected area

Chemical storing	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Minimize the unnecessary clearance of vegetation and minimizing overall prospecting footprint
	Geological change	-	-	-
	Topographic change	-	-	-
	Soil pollution	Immediate Rehabilitation Regular inspection Chemical handling control	Integrated into activity Decommissioning of activity	Avoiding and/or remedying soil pollution as far as possible in order to prevent sterilization of the ground, vegetation loss and the possible impact on the animals and ground/surface waterbodies in the event of storm water run-off
	Grazing loss	-	-	-
	Vegetation disturbance	-	-	-
	Water table level	-	-	-
	Invader plant	-	-	-
	Fauna migration	-	-	-
	Water quality loss	-	-	-
	Noise disturbance	-	-	-
	Air quality degradation	-	-	-
	Archaeological items	-	-	-
	Sensitive landscape	Adhere to mitigation measures	Commencement of activity Integrated into activity	Avoiding and minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	-	-	-
	Waste disposal	Management standards	Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by chemical or chemical containing waste

	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Removal of invader species Closure standards	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas and ensuring the state of environment is as close as possible to the pre-prospected area
Vehicle parking	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Minimize the unnecessary clearance of vegetation and minimizing overall prospecting footprint
	Geological change	-	-	-
	Topographic change	-	-	-
	Soil pollution	Regular inspections Immediate rehabilitation Drip-tray installation	Integrated into activity Decommissioning of activity.	Avoiding soil pollution as far as possible in order to prevent sterilization of the ground, the possible impact on the animals and ground/surface water bodies in the event of storm water run-off
	Grazing loss	Restriction to cleared areas Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Restriction to cleared areas Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Water table level	-	-	-
	Invader plants	Removal of invaders Domestic waste management	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species threatening the fragile indigenous species of the area
	Fauna migration	-	-	-

	Water quality loss (storm water)	Adhere to mitigation measures Soil pollution management	Commencement of activity Integrated into activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operation during office hours	Integrated into activity	Restricting the noise disturbance to acceptable hours to minimize the effect on the residing farm owners.
	Air quality degradation	Dampening of exposed areas	Integrated into activity	Watering of the exposed area will keep the dust stable and prevent any windblown dust
	Archaeological items	Avoid sites of significance	Commencement of activity	Avoiding the destruction of any structures of archaeological and/or cultural significance.
	Sensitive landscape	Avoid significant sensitive sites Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the effect and degradation the activity may have on any significant sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation re-growth decreasing the footprint of vegetation cleared areas
	Waste disposal	Management standards	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by scattered metals and other wastes
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity. Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring the vegetation re-growth of the disturbed area
	Area rehabilitation	Regular inspections Invader plant removal Closure standards	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas, removing invader species and ensuring the state of environment is as close as possible to the pre-prospected area

Diesel storage	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Minimize the unnecessary clearance of vegetation and minimizing overall prospecting footprint
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity can prevent erosion channels forming degrading the natural topography
	Soil pollution	Regular inspections Immediate rehabilitation Impervious sheet layout Regular maintenance	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding, minimizing and remedying of spillage preventing sterilization of the ground, vegetation loss and the possible impact on the animals and ground/surface waterbodies in the event of a storm water run-off
	Grazing loss	Rehabilitation Restriction to cleared areas	Integrated into activity Decommissioning of activity Closure of activity	Avoiding and rectifying the trampling of vegetation used for livestock grazing and ground compaction
	Vegetation disturbance	Traffic restriction	Commencement of activity Integrated into activity	Avoiding the loss of vegetation and ground compaction. Where vegetation growth is hindered a greater probability of erosion exists.
	Water table level	-	-	-
	Invader plants	Removal of invaders	Integrated into activity Decommissioning of activity During closure of activity	Managing and preventing the establishment of invader species endangering the fragile indigenous species of the area
	Fauna migration	-	-	-
	Water quality loss (storm water)	Soil pollution management	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding spillage and ground contamination preventing run-off storm water contamination as well as excessive erosion during such an event

	Noise disturbance	-	-	-
	Air quality degradation	Dampening of exposed areas	Integrated into activity	Watering of the exposed area will keep the dust stable and prevent any windblown dust
	Archaeological items	Avoid sites of significance	Commencement of activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Avoid significant sensitive sites Adhere to mitigation measures	Commencement of activity Integrated in activity Decommissioning of activity	Avoiding and/or minimizing the effect and degradation the activity may have on any sensitive area
	Visual impact	-	-	-
	Waste disposal	Management standards	Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by diesel and/or diesel containing waste
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Closure standards	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas and ensuring the state of environment is as close as possible to the pre-prospected area.
Domestic waste	Vegetation loss	Forming part of the drill site footprint as part of prospecting related activities and structures		Minimize the unnecessary clearance of vegetation and minimizing overall prospecting footprint
	Geological change	-	-	-
	Topographic change	-	-	-

	Soil / litter pollution	Immediate clean-up Continuous inspections	Integrated into activity Decommissioning of activity	Avoiding, minimizing and remedying of litter pollution preventing disturbance to plant and plant growth as well as possible suffering of and even death in animals
	Grazing loss	-	-	-
	Vegetation disturbance	-	-	-
	Water table level	-	-	-
	Invader plants	Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species threatening the fragile indigenous species of the area
	Fauna	Adhere to mitigation measures Immediate clean-up	Integrated into activity Decommissioning of activity	Avoiding and/or minimizing of littering will help to prevent animal suffering and even loss of life
	Water quality loss (storm water)	-	-	-
	Noise disturbance	-	-	-
	Air quality degradation	-	-	-
	Archaeological items	-	-	-
	Sensitive landscape	Adhere to mitigation measures Waste management	Commencement of activity Integrated into activity	Avoiding and/or minimizing the effect litter and litter pollution may have on sensitive landscapes
	Visual impact	Waste management Litter pollution management	Commencement of activity Integrated into activity	Avoiding and managing the effect of scattered waste materials have on the scenery of the area and surrounding environment
	Waste disposal	Management standards	Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by littered plastics and related waste materials

	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the mitigation measures, rehabilitation standards and closure objectives by keeping the area litter free which may disrupt the re-growth and halter the growth of vegetation
	Area rehabilitation	Regular inspections Closure standards	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by keeping the area litter free and in the same condition as before operations commenced.
Access road and drill traverses	Vegetation loss	Use of existing road Vegetation clearing control Minimum roads possible	Commencement of activity Integrated into activity	Avoiding extensive and unnecessary vegetation loss
	Geological change	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity can prevent erosion channels forming degrading the natural topography
	Soil pollution	Immediate rehabilitation Regular inspections	Integrated into activity Decommissioning of activity	Prevents the sterilization of soil by hydro-carbon fluids.
	Grazing loss	Restriction to roads Rehabilitation	Integrated into activity Decommissioning of activity	Prevents the trampling of vegetation and compaction of ground
	Vegetation disturbance	Restriction to roads Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding, minimizing and/or rectifying the loss of vegetation and ground compaction. Where vegetation growth is hindered a greater probability of erosion exists
	Water table level	-	-	-
	Invader plants	Regular removal Continuous inspections	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the fragile indigenous species of the area
	Fauna migration	-	-	-

	Water quality loss (storm water)	Strom water control Erosion control Soil pollution management	Commencement of activity Integrated into activity	Avoiding run-off storm water contamination as well as excessive erosion during such an events
	Noise disturbance	Operations within office hours	Integrated into activity	Restricting the noise disturbance to acceptable hours to minimize the effect or the surrounding community
	Air quality loss	Dampening of mine roads Speed and road restriction	Integrated into activity	Reduced speed and stabilizing of dust by dampening will minimize dust upliftment influencing the air quality
	Archaeological items	Avoid sites of significance Restriction to roads	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Avoid significant sensitive sites Adhere to mitigation measures Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation re-growth decreasing the footprint of vegetation cleared areas
	Waste disposal	Management standards	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding the degradation of the environment as well as the health of any individual, animal, plant and/or soil by free laying waste materials
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity Closure of activity	Complying with rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas
	Area rehabilitation	Regular inspections Remove invader species Closure standards	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation re-growth of the disturbed areas, removing invader species and ensuring the state of environment is as close as possible to the pre-prospected area.

1.7 Financial Provision

1.7.1 Determination of the amount of Financial Provision

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

The sole determined objective is to rehabilitate the area during and after the prospecting activities to such an extent that the post prospected environment is almost in the same condition as the original undisturbed environment.

When rehabilitation proves successful the vegetation re-growth must be of such quality that this area can be used as a grazing field for farm livestock.

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

The environmental objectives in relation to the closure still needs to be consulted with the landowner and will be done during the final stages of consultation and Environmental Management Programme consultation. The land after prospecting will most probably be the continuation of natural grazing land for livestock and farming activities.

1.7.1.3 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

A rehabilitation plan cannot be graphically given at this time as the locations of the invasive operations can only be determined after the 1st phase of the prospecting operations.

The end-land use after final rehabilitation would probably the continuation of farming activities, but is dependable on the decision of the land owner.

Rehabilitation is planned to occur in the following manner:

- All drill holes will be rehabilitated before commencing to the following hole position

- Under normal circumstances will the frill chips that have been extracted be backfilled in a reverse sequence as being drilled out. Should a groundwater body be encountered/intersected or during core drilling will the rehabilitated of the hole be done through the casing and sealing of the hole and the clear marking thereof. Casing of a hole will entail that ground is excavated with a dimension of 1 x 1 x 1 m. With the casing of the hole a cement slap of 1 x 1 x 0.5 m is constructed and covered with the excavated soil

- The rehabilitated area will be continuously inspected against invader plant species and to monitor the indigenous vegetation regrowth

During the decommissioning of the project the following will be done to ensure a successful closure

- All prospecting infrastructure will be removed from the area and the compacted ground ripped and rehabilitated.

- Prospecting roads will also be ripped and rehabilitated.

- All rehabilitated areas will be monitored and regularly inspected against invader species as well as monitoring the indigenous vegetation regrowth rate.

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

Throughout the whole document during the environmental assessment and environmental management all possible management, remediation and mitigation measures were planned toward the rehabilitation of the environment to result in an outcome compatible with the closure objectives.

The area will be fully rehabilitated according the procedures stipulated throughout this document and to the satisfaction of the Department of Mineral Resources and the landowner. This can be accomplished by the correctness of the rehabilitation and proper after-care activities.

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

CALCULATION OF THE QUANTUM

Applicant: DNA RESOURCES (PTY) LTD

Location: ENGELDEWILGEBOOMFONTEIN
Date: SEPTEMBER 2021

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		R 18.42	1	1	R -
2 (A)	Demolition of steel buildings and structures	m2		R 256.63	1	1	R -
2(B)	Demolition of reinforced concrete buildings and structures	m2		R 378.15	1	1	R -
3	Rehabilitation of mine roads	m2		R 45.92	1	1	R -
4 (A)	Demolition and rehabilitation of electrified railway lines	m		R 445.73	1	1	R -
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m		R 243.13	1	1	R -
5	Demolition of housing and/or administration facilities	m2		R 513.26	1	1	R -
6	Opencast rehabilitation including final voids and ramps	ha		R 261 224.38	1	1	R -
7	Sealing of shafts adits and inclines	m3		R 137.77	1	1	R -
8 (A)	Rehabilitation of overburden and spoils	ha		R 179 372.28	1	1	R -
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha		R 223 404.93	1	1	R -
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		R 648 873.81	1	1	R -
9	Rehabilitation of subsided areas	ha	0.09	R 150 197.24	1	1	R 13 517.75
10	General surface rehabilitation	ha	0.18	R 142 093.10	1	1	R 25 576.76
11	River diversions	ha		R 142 093.10	1	1	R -
12	Fencing	m		R 162.08	1	1	R -
13	Water management	ha		R 54 027.79	1	1	R -
14	2 to 3 years of maintenance and aftercare	ha	1.8	R 18 909.73	1	1	R 34 037.51
15 (A)	Specialist study	Sum				1	R -
15 (B)	Specialist study	Sum				1	R -
					Sub Total 1		R 73 132.02

1	Preliminary and General	R 8 775.84	weighting factor 2 1	R	8 775.84
2	Contingencies	R 7 313.20		R	7 313.20
			Subtotal 2	R	89 221.07
			VAT (15%)	R	13 383.16
			Grand Total	R	**102 604.23**

As seen from the above table the amount of R 102 604.23 was calculated using the Department of Mineral Resources' approved Financial Provision Quantum Calculation table.

Taking the type of prospecting activities, the footprint per borehole as well as that the drill vehicle will stay stationary and not travel in an out of the project area on a daily basis with the use of existing roads into consideration, the calculated financial provision propose that a total amount of **R 102 604.23** is found sufficient by the Department of Mineral Resources.

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

The applicant will provide the financial provision in the form of a bank guarantee of **R 102 604.23** on the acceptance of this the reduced amount and approval of this document from the Department of Mineral Resources.

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

- **1.8.1 Monitoring of Impact Management Actions**
- **1.8.2 Monitoring and reporting frequency**
- **1.8.3 Responsible persons**
- **1.8.4 Time period for implementing impact management actions**
- **1.8.5 Mechanism for monitoring compliance**

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 PEROIDS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS.
Non-invasive activities	Vegetation loss	Extent of vegetation loss	Environmental Manager	Continuous
		Vegetation re-establishment rate	-	-
		Presence of invader species	Environmental Manager	Continuous
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	-	-
	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Drilling	Vegetation loss	Extent of vegetation loss	Environmental Manager	Continuous
		Vegetation re-establishment rate	Environmental Manager	Monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	Monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	Monthly
	Waste management	Monitoring waste management	Environmental specialist	Continuous
Ablution	Vegetation loss	Extent of vegetation loss	Environmental Manager	Continuous
		Vegetation re-establishment rate	Environmental Manager	Monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	-	-

	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Plant site	Vegetation loss	Extent of vegetation loss	-	-
		Vegetation re-establishment rate	Environmental Manager	Six monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	Monthly
	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Chemical storing	Vegetation loss	Extent of vegetation loss	-	-
		Vegetation re-establishment rate	-	-
		Presence of invader species	-	-
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	-	-
	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Vehicle parking	Vegetation loss	Extent of vegetation loss	Environmental Manager	Continuous
		Vegetation re-establishment rate	Environmental Manager	Monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	Monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	Monthly
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Diesel storage	Vegetation loss	Extent of vegetation loss	-	-
		Vegetation re-establishment rate	Environmental Manager	Monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	-	-
	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous

Domestic Waste	Vegetation loss	Extent of vegetation loss	-	-
		Vegetation re-establishment rate	-	-
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible littering	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	-	-
	Air quality loss	Monitoring of dust fall	-	-
	Waste management	Monitoring waste management	Environmental Manager	Continuous
Access road and drill traverses	Vegetation loss	Extent of vegetation loss	Environmental Manager	Continuous
		Vegetation re-establishment rate	Environmental Manager	Monthly
		Presence of invader species	Environmental Manager	Monthly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	Monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	Monthly
	Waste management	Monitoring waste management	Environmental Manager	Continuous

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

The submission of the performance assessment / environmental audit reports will be done on an annual basis of on decommissioning and closure of the project as legislatively required.

1.10 Environmental awareness plan

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

Initial employee training will be done on employment of personnel, handling all issues related to General and Conservational Environmental Awareness. Follow up training workshops will be held on a monthly and when expansion and/or implementation of new equipment are introduced to the mine.

Motivation:

- Inspections will be held on a regular basis against the do's and don'ts listed within this document. Immediate penalties can be given to offenders.

- On the discretion of the mine, motivation can be implemented

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

- Everyday Awareness
  - Littering – As wild species still roam the area from time to time, the accidental ingestion of litter is a possibility and highly dangerous as it can and will kill the animal involved. Even when not ingested smaller mammals are always at risk in getting tangled with plastics, rubber etc., this can ensure numerous suffering and eventually death of the animal.

    Plastics, rubber, some types of paper and glass are not biodegradable and release poisons into the environment when exposed to harsh weather conditions. Even when buried, they tend to resist weathering. These poisons released into the environment can be harmful to our plant species, but even if it is not harmful to the plant itself the plant tend to store all absorbed substances in their fruit, roots and root tuber and the last mentioned may be utilized by humans or animals leading to the consumption for harmful chemicals that may pose illness or even death.

    No glass, paper, plastics and cigarette buds are to be littered during the duration of the prospecting operations. Garbage containers will be installed and maintained to prevent litter pollution.

- Open fires – The Northern Cape is generally known as a semi-arid region with less than normal rainfall per annum. It is however by law prohibited to start open fires.

  Due to the hot and dry conditions of the region is it very susceptible for run-away fires. No open fires will be tolerated during the prospecting period and as this is regarded by law as a criminal offence related penalties can be issued. The littering of self ignitable substances or objects (e.g. matches) are also not allowed as it will always pose a danger regarding field fires, and if such happen the person responsible to the littering will be charged with arson and related penalties can be issued.

- Sanitation and Personal Hygiene
  Sanitation and personal hygiene is a very important subject for environmental and social health. Improper sanitation habits can lead to intestinal parasite infestations within humans and animals, endangering the overall health of the recipients. Unfortunately these infestations do not stay only within the host and will spread rapidly throughout a community or herd.

  Human viruses like Tubercle bacillus (TB) and Herpes simplex, both are very contagious, spread vigorously throughout a community not handling good hygiene habits/practices.

  - ✓ Strict use and cleanliness of the toilette facilities will be enforced during the entire life of mine.

  - ✓ Employees will further be advised and educated on the importance of consuming clean and fresh water. Several sites will be identified and water tanks will be erected for safe human water consumption.

- Fauna – Wild animals roaming within the area is a common sight from time to time, but reptiles and smaller rodents permanently inhabit the area. Wild animals are and will always be very dangerous.

  Employees and contractors will be advised to stay clear from any wild animal or reptile and not to try and provoke them in any manner. They will further be educated on dangerous and poisonous reptiles and the actions to be taken when such reptiles are encountered.

- Flora

  The vegetation of the Northern Cape regions is very fragile and easily endangered by alien species invading the Northern Cape at an alarming rate and due to the slow growth rate of our indigenous species.

  - ✓ No indigenous shrubs of trees will be unnecessarily uprooted and utilized for firewood, the employees will rather be advised to utilize invader species and be educated on which plant species are indigenous, endangered or alien.

  - ✓ If any invader species are observed the reporting thereof to the rehabilitation site manager will be highly recommended.

  - ✓ Penalties will be given to individuals that damage any endangered species.

- Work Related Awareness
  - When handling related chemicals make sure of non-spillage procedures.

  - Related waste/scrap must be dispose off in the appropriate manner.

  - Plastic and domestic wastes removed from the vehicles from the vehicles need to be discarded in the appropriate manner

  - If any oil or diesel leakage is observed, immediate communication and repair of vehicle needs to be done

  - Daily checking for oil/diesel leakages before vehicle is operated

  - Drip pans must be installed during “off-time”

  - Immediate communication when faults are observed.

  - Strict adherence to the roads and no off-road driving to prevent trampling of vegetation

  - Driving speed must be complied with. Beware of animals, workers and other vehicles.

  - Common fence wires may not be left scattered as these rust over time – any cuts to animals and humans (sepsis and tetanus risk) can lead to suffering or great discomfort.

  - No metals may be left scattered as it pose the same threat as described directly above

- All personnel handling chemical relating products must follow handling procedures – any spillage contaminating the ground will pose risk to environmental degradation

- All chemicals used must be put to storage afterwards – containers may leak and environmental contamination occurs.

1.11 Specific information required by the Competent Authority

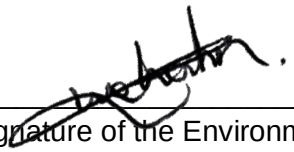
(Among others, confirm that the financial provision will be reviewed annually)

- Annual Renewal of financial provision
- Annual Monitoring and Compliance Report
- Annual Progress Report
- Annual Environmental Awareness Training Report

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
Name of Company: **LW Consultants (Pty) Ltd**
Date: **25 October 2021**

***** END *****