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:	**PITSO 7STAR SAND EN KLIP (PTY) LTD**
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FAX NO:	**086 503 6494**
POSTAL ADDRESS:	**13 VAN REENEN STREET, KROONHEUVEL, KROONSTAD, 9599**
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FILE REFERENCE NUMBER SAMRAD:	**FS 30/5/1/3/2/10224 MP : PERMIT NO 13/2018**

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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
Physical address:	19 Park Road, Belgravia, Kimberley, 8301
Postal address:	PO Box 3226, Kimberley, 8300
Tel no:	053 831 7634
Cell:	072 141 4164
Fax No:	086 606 6315
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 Consultant and successfully completed an Environmental Impact Assessment on the farm Groot Derm 10, Alexanderbay (2012). During the year 2015 till date she undergone company name changes and is now consulting under LW Consultants.

Successful projects under the new DMR and NEMA regulations:

- EIA/EMPr Mining Right Roodepan 70 (2015)
- BEAR/EMPr Prospecting Right Bergplaats 502 (2016)
- BEAR/EMPr Mine Permit Longlands 350 (2016)
- EIA/EMPr Mining Right Nooitgedacht 66 (2017)
- BEAR/EMPr Mine Permit Rooifontein 1722 (2017)
- Rehabilitation Mining Right NWA Schmidtsdrift (2018)
- BEAR/EMPr Mine Permit Middenspruit 151 (2018)
- BEAR/EMPr Mine Permit Bospoort 558 (2018)

Successful projects abroad under their specified regulations:

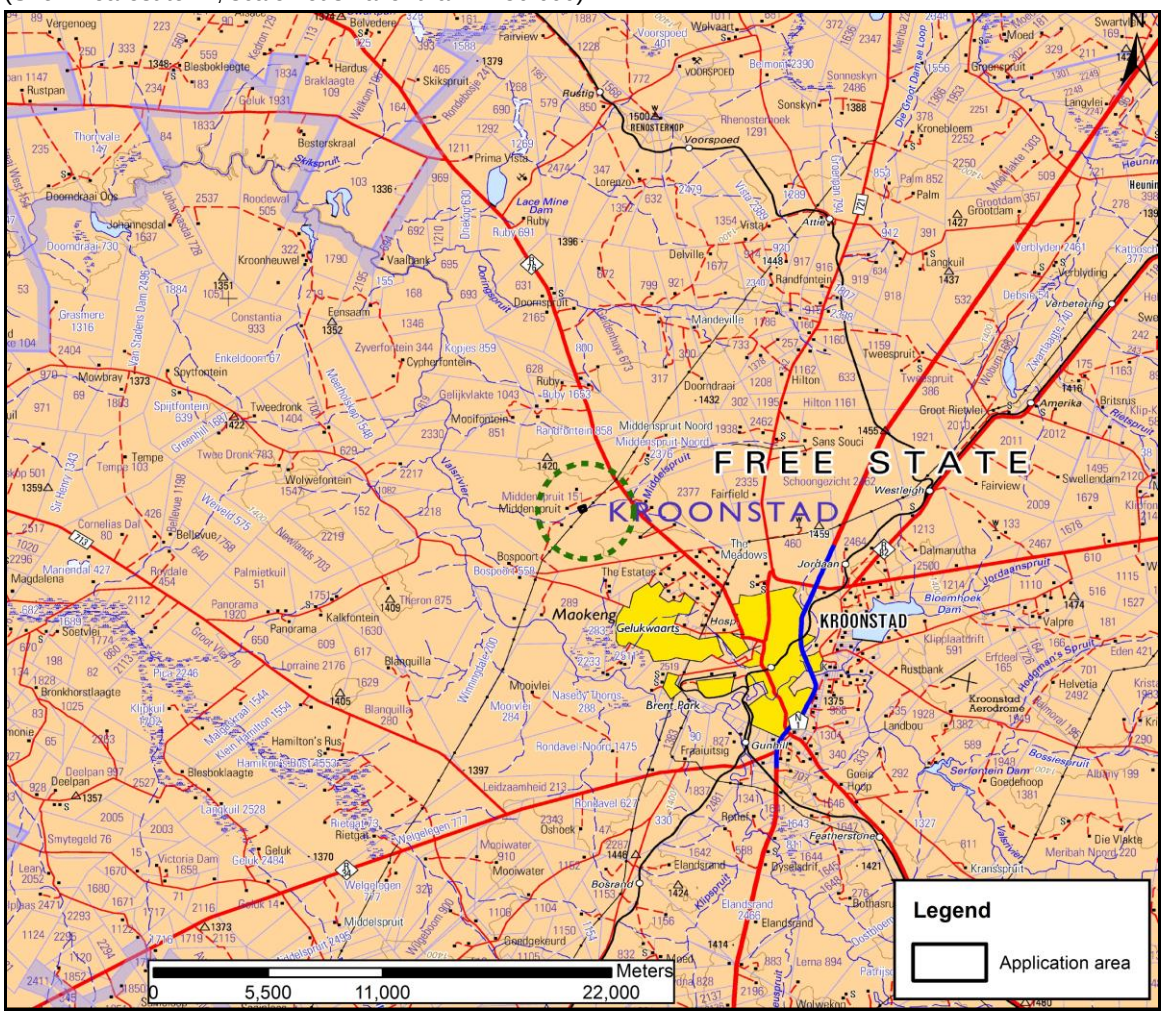
- EIA/EMPr Mining Chimanimani, Zimbabwe (2018)

2. Location of the overall Activity

Farm Name	A portion of the Remainder of the farm Bospoort 558
Application area (Ha)	4.9554 ha (Four comma nine five five four hectares)
Magisterial district:	Kroonstad
Distance and direction from nearest town	The application area is situated 16.2 km west of Kroonstad and 67.8 km south east of Bothaville.
21 digit Surveyor General Code for each farm portion	F02000000000055800000

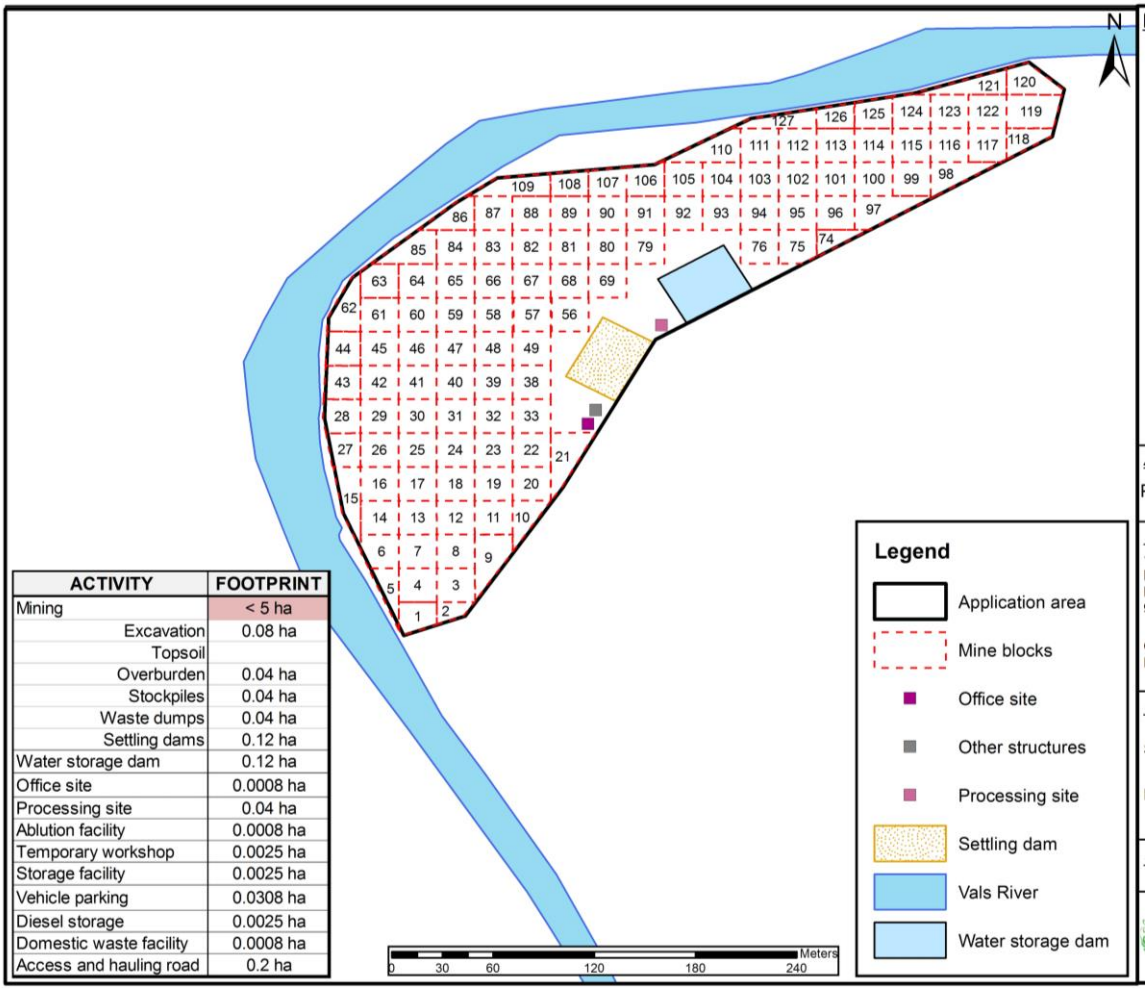
3. Locality map

(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)



ACTIVITY	FOOTPRINT
Mining	< 5 ha
Excavation	0.08 ha
Topsoil	
Overburden	0.04 ha
Stockpiles	0.04 ha
Waste dumps	0.04 ha
Settling dams	0.12 ha
Water storage dam	0.12 ha
Office site	0.0008 ha
Processing site	0.04 ha
Ablution facility	0.0008 ha
Temporary workshop	0.0025 ha
Storage facility	0.0025 ha
Vehicle parking	0.0308 ha
Diesel storage	0.0025 ha
Domestic waste facility	0.0008 ha
Access and hauling road	0.2 ha

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)**
Mining			
Excavation	Total: <5 ha Per site: 0.08 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		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
		X	NEMA 2017, GNR 327, Listed 1, Activity 27: The clearance of any area of 1 hectares of more, but less than 20 hectares of indigenous vegetation
Topsoil		X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of the mineral resource …
		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

Overburden	0.04 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		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
Stock piles	0.04 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 633, Category A, Activity 15: The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a mining permit
		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
Waste dumps	0.04 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category B, Activity 13: Inert waste … (c) discarded soil, stones …

		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
Settling dams	0.12 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMA GNR 588, Category A, Activity 18: Waste resulting from … mining … waste from physical … processing of non-metalliferous minerals
		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
Water storage dam	0.12 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		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
Office site	0.0008 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …

		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
Processing site	0.04 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing …
		X	NEMWA GNR 588, Category B, Activity 11: Building and demolition waste … (e) other building and demolition waste
		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
Ablution Facility	0.0008 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
Temporary workshop facility	0.0025 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category A, Activity 12: Oil wastes and wastes of liquid fuels … (a) waste hydraulic oils … (b) waste engine, gear and lubricating oils … (d) oil/water separator contents

		X	NEMWA GNR 588, Categroy B, Activity 13: Inert waste … (a) discarded concrete …
		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
Storage facility	0.0025 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category B, Activity 13: Inert waste … (a) discarded concrete …
		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	0.0308 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category A, Activity 12: Oil wastes and wastes of liquid fuels … (a) waste hydraulic oils … (b) waste engine, gear and lubricating oils … (d) oil/water separator contents
		X	NEMWA GNR 588, Category B, Activity 13: Inert waste … (a) discarded concrete

		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	0.0025 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category A, Activity 12: Oil Wastes and wastes of liquid fuels … (d) oil/water separator contents
		X	NEMWA GNR 588, Category B, Activity 13: Inert waste … (a) descarded concrete …
		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	0.0008 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 21: Any activity including the operation of that activity which requires a mining permit … (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource …
		X	NEMWA GNR 588, Category B, Activity 12: Domestic waste … (b) municipal waste
Access and hauling road	0.2 ha	X	NEMA 2017, GNR 327, Listed 1, Activity 24: The development of a road … (ii) … where no reserve exists where the road is wider than 8 meters
		X	NEMA 2017, GNR 327, Listed 1, Activity 56: The widening of a road by more than 6 meters … (ii) where no reserve exists, …

		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

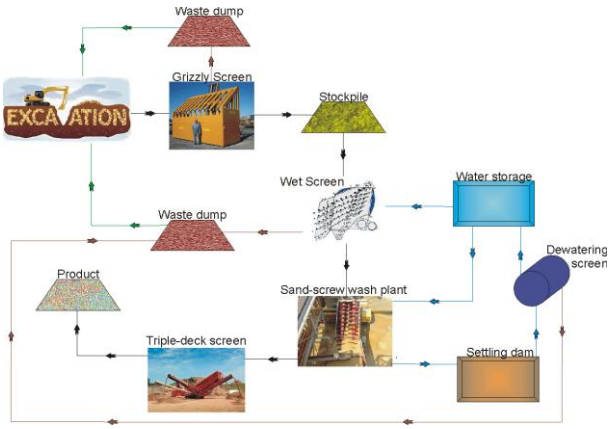
  During the construction for the mining operations will an area of ± 30 x 30 m (862 m^2) cleared for the processing, storage and office sites. This site will also be clearly demarcated as well as the different structures.

  Attached to this document within the proposed prospecting plan/site the location of such structures is indicated, but the actual location of such structures can only be determined once the permit has been issued and an in-depth environmental study conducted to ensure the least environmental damage possible.

- Operational

  During the operation phase will mining activities occur in a block format as far as possible with rehabilitation forming and integral part of the operations. Mining blocks of 20 x 20 meters will be excavated and screened to remove boulders and larger stones to obtain a soil material and stockpiled for processing.

  Before processing the soil material is further screened in a wet screen to obtain the -2 mm sand for washing while the +2 mm is stored for rehabilitation purposes. During processing the sand is washed in a sand-screw wash plant to remove all the silt and other impurities. The clean sand obtained is stored to dry before final screening of the product into +0.5, -2 mm coarse sand and +0.25, -0.5 mm medium sand. The fine sand is discarded on the waste dump for final rehabilitation purposes.



  The waste materials is stored within a silt dam till it is treated in a dewatering screen to remove the water for re-use within the washing plant while the silt, clay and alluvium is stored on the waste dump with the fine sand for final rehabilitation of the area.

  The rehabilitation of the area forms an integral part of the activities as will be done continuously to ensure cost effective and successful mining operations. The boulder/larger stone material with the surplus from the wet screens will be backfilled into the fully excavated areas until all the waste material have been depleted and sloping the sides of the remaining excavation to less than 30° to create a safe post mining state. Once backfilling is completed a mixture of fine sand, silt clay and alluvium (combined as soil) will be evenly spread to finalize the rehabilitation of the area.

After rehabilitation has been finalized a two to three year maintenance programme is initiated. All rehabilitated areas will be regularly checked for invader species, if such species are found they will be removed to ensure successful revegetation of indigenous plant species.

- Decommissioning
  Once the mining 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 mine 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 … mine … for and produce any mineral .. or commence with any work indidental thereto on any area without – a ….mining 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 … mine … 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.

Waste resulting from … mining … and physical .. treatment of minerals	Section 18 (Category A) of Act 26 of 2014 (NEMWA, 2014)	In te process of conduction the Basic Environmental Assessment and Environmental Management Programme

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 project is situated approximately 16.2 km west of Kroonstad in the bend of the Vals River and includes an un-rehabilitated previously mined area, which needs to be rehabilitated properly, but the geological indicated sand body that can be used.

The Kroonstad community is known for their poverty. The development of a mine will aid in job creation for local people. The mine further will aid in an income influx for both employees as well as local businesses aiding in an economic growth within the area.

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

The proposed project area is demarcated to include the sand body as well as enough space for the construction of the offices and processing plan outside the 100m flood line. Although the river gorge is so deep that when the river is in flood, it is not foreseen that the water will reach the top banks and flood into the indicated 100 year flood line. An alternative office and/or plant site will result in the transportation of dump material creating more noise disturbance and possible air quality loss.

The activities and technology used is planned and designed to created and cause the minimal disturbance possible. Working hours is also kept within standard office hours for the purpose of minimizing noise disturbance.

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

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

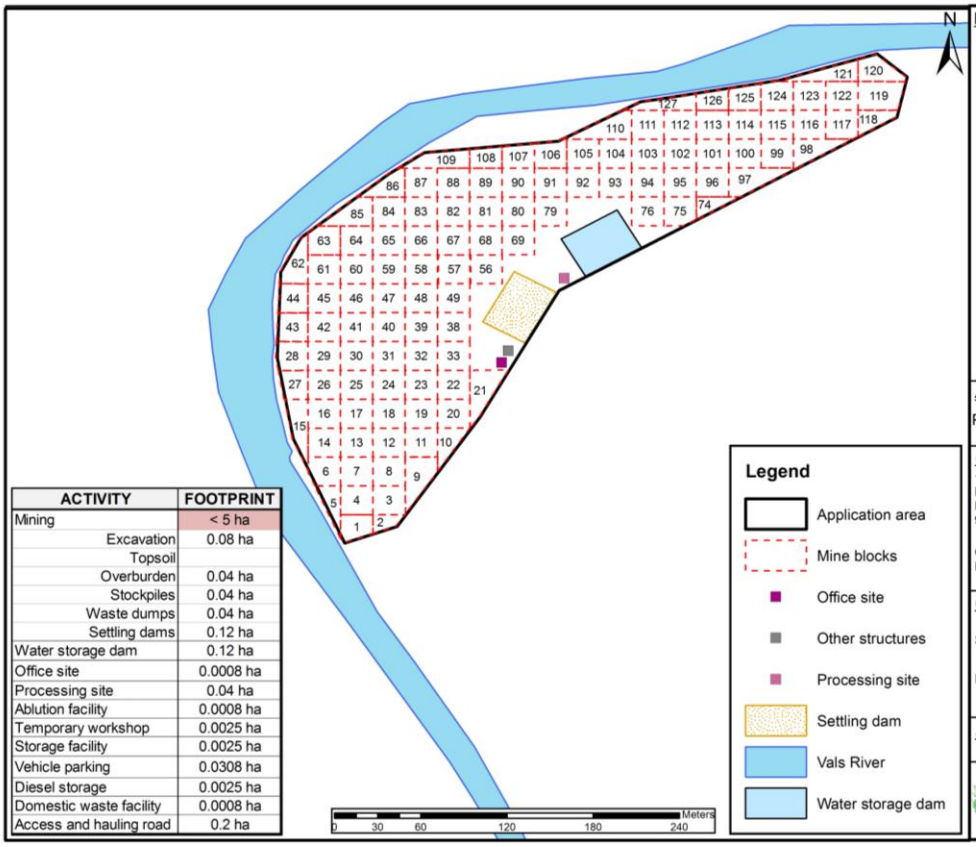
8.1.2 the type of activity to be undertaken

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



ACTIVITY	FOOTPRINT
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Storage facility	0.0025 ha
Vehicle parking	0.0308 ha
Diesel storage	0.0025 ha
Domestic waste facility	0.0008 ha
Access and hauling road	0.2 ha

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

- Mining
  - Although a total approximate area of 4.6 ha will be mined over a period of 2 years as applied for, mining will be conducted in a block format to remove all possible sand materials for processing. The blocks are demarcated as 20 x 20 m blocks, but actual mining excavations will be 10 x 10 meter. This allows for the effective mining of one section of the block while the other is being backfilled for rehabilitation.

  - The technology used in this activity will be an excavator, and dumper truck to transport the excavated material from the excavation to the plant site.

  - Sand material is excavated for selling purposes. The topsoil and overburden is removed where necessary and stored near the excavation for easier rehabilitation activities. The sand is excavated and transported to the processing site for processing.

  - This activity is necessary to extract the commodity for processing. This activity is the most critical part of the proposed mining activities and therefore the option of not implementing the activity cannot be considered.

- Topsoil and overburden dumps
  - All topsoil and overburden material removed is stored in close proximity of the excavation for rehabilitation purposes.

  - No technology will be used in this activity other than dumper trucks transporting the material from the excavation and back during rehabilitation

  - If this activity is not implemented the excavation activities cannot continue and/or rehabilitation activities haltered. For this reason the option of not implementing the activity cannot be considered.

- Stockpiles
  - All sand material removed and screened will be stockpiled for processing and thereafter the selling thereof.

  - No technology will be used in this activity other than dumper trucks transporting the material to the stockpile.

  - If this activity is not implemented mining activities cannot continue fluently affecting the cost effectiveness of the mining operations. For this reason the option of not implementing the activity cannot be considered.

- Waste dumps
  - Waste material will be hauled from the various mining processes and stored separate from the stock dumps, but sill in the same region. The specific design of this activity is dependent on the amount of waste material generated during the activities.

  - No technology will be used within this activity and this is only the storing of solid waste material.

  - The operational aspects of the activity is the storing of waste until the removal thereof, for use in mining related features or rehabilitation of excavated areas.

  - The option of not implementing the activity is ruled out by the fact that waste material is a by-product of any mining activity and must be stored till usage or rehabilitation of the mined areas.

- Settling dams
  - The settling dam (0.12 ha) are located near the plant site for efficient water flow and use. This dam forms a unit for water recycling to ensure relative lean water for the sand washing activities.

    The design of the dam is engineered in such a way that settlement of suspended materials is ensured. At the end of the dam water is pumped through a specialized dewatering screen into a water storage dam from where it is re-used in the processing operations.

  - Old dump material is used as the construction material for this dam. Water from the various activities will be pumped into the dam from where is will be pumped through a dewatering screen.

  - The primary operational aspect of the activity is to clean the waste water that resulted from the mineral processing activities. Water is pumped into the settling dam. Most of the suspended materials settle delivering cleaner water to be pumped through the dewatering screen before going to the storage dam. Settle materials within the settling dam will be cleaned on a regular basis and the settled material used for covering material.

    The ultimate result of this activity is water recycling minimizing water use from the water resource as will a minimizing the ultimate footprint of silt dams.

  - Should this option of water reticulation be eliminated the recyling of water is not possible resulting in bigger silt dams and a more difficult rehabilitation as well as a 100% use of source water.

    To ensure cost effective mining with minimal environmental impact the option of not implementing the activity is eliminated from the mine planning operations.

- Water storage dam
  - The water storage dam (0.12 ha) is also located near the plant site for efficient water flow and use. This dam forms a unit for water storage to be used during the mineral processing activities

    The design of the dam is engineered in such a way that water overflow is possible in a storm event, with the overflow water being captured to be pumped back into the dam. Water flow will be continuous with the receiving of clean water and pumping of water to the process plant.

  - Old dump material will be used as the construction material for this dam. Clean water from the settling dam will be pumped into this dam.

  - The primary operational aspect of the activity is to store clean water for the processing activities. Clean water from the settling dam, which has been treated with a dewatering screen, is pumped into this dam for re-use during processing. Water from the Vals River will only be pumped into this facility as needed, conserving water as far as possible.

  - Should the option of storing water be eliminated the recycling of water is not possible resulting in bigger settling dams and 100% use of source water.

    To ensure cost effective mining with minimal environmental impact the option of not implementing the activity is eliminated from the mine operations.

- Office site
  - The office block will be installed and have an approximate footprint of 0.0008 ha. This site will house several units including general office, mine health and safety office and fist aid room.

  - The office site will be mobile offices / Wendy house fitted with relevant equipment/furniture for its specific task.

  - All administrative activities, storing of files, mine financials and discussions will be occurring within this facility.

  - Acquiring office buildings within the town is an option, but not the best option to implement. Regulation of the mining activities will be very difficult and driving back and forth from the town to the mine will be very time consuming, not cost effective and certainly decrease productiveness within the working environment.

    The best option is to keep the offices within the mine premises for proper managing, activity regulation, accident and damage control as well as optimizing productivity.

- Processing site
  - The processing plant site (approximately 0.04 ha in footprint) shall not be formally demarcated but demarcated with berms to indicate the allowed area for movement. Equipment used within this site will be installed in an almost inline manner for sufficient and effective mineral processing operations.

- The technology used for the mineral processing area: Vibrating screens, conveyors and a sand-screw wash plant

- The excavated material is initially screened to obtain the desired grain size sand for processing. From the screens the sand is loaded into a feeder bin, which feeds the wash plant. The wet sand obtained is stockpiled and left to dry from where it is fed to a vibrating screen to obtain the different sand sizes and product.

  The waste water obtained is pumped into a settling dam from where it is treated for recycled use.
- The option of not implementing this activity is regarded as a no-go as this activity is one of the cores processes in any sand mining operation.

- Ablution facility
  - Two chemical toilet facilities (with a total footprint of approximately 0.0008 ha), separating male and female employees, will be installed on site.

  - Contractual agreements will be made and basic flushing chemical toilets installed. Within the female facility will sanity bins be provided for their specific needs and emptied on a daily bases.

  - These facilities are to support the sanitation protocol of the mine. These facilities 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)

- Temporary Workshop facility
  - The workshop is planned to be constructed with a footprint of 0.0025 ha. The workshop should be a closed facility with the option of a door that can be locked, but can also take the form of a barnlike structure. The floor however must be constructed at a gradient with a channel at the lowest side relaying water and oils to a run-off sump from where it will be pumped in containers and discarded in the appropriate manner.

  - This facility should be equipped with all the necessary equipment and stock for the daily trade activities of mechanical maintenance, electric maintenance, plumbing, boiler making, fitting and turning and all other related activities needed on the mine.

  - This facility serves as a secured working space for mine employed tradesmen containing all the necessary equipment to their disposal for optimally performing their job.

- The option of not implementing this activity is not the best option to consider as tradesmen and a workspace for them are an essential part of mining and mining related activities. If this activity is not implemented maintenance, rectifying and building of certain materials and equipment will need to be done within the towns that may proof to be difficult, expensive and time consuming.

- Storage facility
  - The storage facility's (approximate footprint of 0.0025 ha) is situated at the administrative portion of the mine. This is to ensure access control and regulation of chemical handling. The facility should be a well ventilated construction with the ability to be locked.

    Within this structure several leak-proof 'bays' must be present for the different chemicals to be stored as well as being large enough to contain the total volume of that specific chemical containers combined plus 5%

  - Ventilation within this facility will be ensured through adequate roof ventilation systems. The structure itself and bays will be erected according the engineer plans and the recommendations of the engineer for materials suitable for this activity.

  - This facility'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 placed within this storage facility for the storage of used mechanical parts till the removal thereof.

    Once the used chemical containers are approximately 80% the relevant agencies will be contacted for handling and correct removal of such chemicals

  - The option of not implementing this activity is ruled out as the activity of the correct storing of chemicals legislatively required 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
  - The parking area (approximately 0.0308 ha) is designed to house designated vehicle parking (0.02 ha), concrete constructed wash bay (0.006 ha) and an auto-parts storage facility (0.0048 ha) that will be situated next to the office block and storage area. The area will be also cleared of all vegetation, leveled and parking zones demarcated either with berms or waste rock.
    - Wash bay
      - The wash bay is planned to be constructed at the vehicle parking area. The floor must be constructed at a gradient with a channel at the lowest side relaying water and oils to a run-off sump from where it will be pumped in containers and discarded in the appropriate manner.

      - This facility should be equipped with all the necessary equipment and stock for the daily trade activities of washing equipment and vehicles.

- This facility serves as a secured working space where equipment and vehicles can be cleaned for maintenance purposes.

- The option of not implementing this activity is not the best option to consider as vehicles needs to be cleaned before and after maintenance to minimize possible ground contamination. Also cleaning of vehicles and their engines prolong the productivity and lifespan of such vehicle.

  - Auto-parts storage facility
    - This store room is planned to be constructed near the workshop. This should be a closed facility with the option of a door that can be locked.

    - This facility will be equipped with all the necessary auto-motive and equipment parts for the daily maintenance and repair activities of overall mine maintenance.

    - This facility serves as a secured storage facility for parts and equipment needed for the employed tradesmen to be able to optimally perform their daily tasks.

    - The option of not implementing this activity is not the best option to consider as if the basic and necessary parts are not available it must be obtained within the towns that may proof to be difficult, expensive and time consuming.

  - Drip pans will also be readily available for vehicles during off-time. No other technologies will be used during this activity

  - The parking area will be sectioned and demarcated for the various activities. All mine vehicles, visitors' vehicles, employee vehicles and heavy vehicles will be parked in this area within their different sections. All vehicles will however be required to adhere to the reversed parking policy for the safety of all vehicles in the case of an emergency.

  - Should this activity not be implemented pollution and chemical spill control cannot be optimally managed as well as the informal parking of other normal vehicles can lead to difficult driving environment for heavy vehicles. For this reason and legislative requirements this activity cannot be excluded as a mining related activity and thus planned to be implemented during the construction phase of the mining activities.

- Chemical storage
  - The storage facilities (approximate footprint of 0.0025 ha) are situated at the administrative portion of the mine. This is to ensure access control and regulation of chemical handling. The facility should be well ventilated construction with the ability to be locked.

  - Ventilation in this facility will be ensured through adequate roof ventilation systems. The structure itself will also be in the form of a mobile container.

- This facility'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 place within this storage facility for the storage of used mechanical parts till the removal thereof.

  Once the use chemical containers are approximately 80% full the relevant agencies will be contacted for handling and correct removal of such chemicals.

- The option of not implementing the 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.

- Diesel Storage
  - One diesel tank (>23 m^3) with its bunker bay and refueling concrete floor, with an approximate footprint of 0.0025 ha, will be installed on the mine.

  - The technology used shall be of the highest standards provided by the contracting diesel/fuel agency. The actual volume of the tank is currently unknown, but it is compulsive that the mine is supplied with a diesel tank already equipped with a leak-proof bay to prevent any ground contamination should the tank be leaking by fault or bursting.

  - Diesel will be kept within these containers for refueling purposes during the mining activities. The contracting agency will be refilling these tanks on a regular basis and only then will be tank be inspected and maintenance procedures carried out.

    Machinery will be parked on a cement slap net to the tank for re-fuelling activities. This cement slap shall be contracted at a gradient with a run-off channel leading to a sump for impact prevention should any accidental spillage occur. The sump will also be cleaned and maintained on a regular basis by the contracting agency.

  - Taking the rural setting of the project into consideration alternatives to this activity was regarded as a no-go option. The reason for such is that should there not be diesel available for the refueling on site these huge mining vehicles must go into town for their refueling needs that will lead to breakdown of these equipment, as they are not manufactured for long distance driving, traffic congestions, trampled roads and possible major accident that could have been avoided as well as being time consuming leading to non-feasible mining.

- Domestic waste facility
  - The domestic waste facility (approximate footprint of 0.0008 ha) will be installed at the office sites.

  - The technology used shall be of local municipal standard including a tip-proof and scavenger proof bin. Agreements with the local municipality will signed for the removal of waste on their schedule.

  - 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 can be taken into consideration and should the activity not be implemented a greater risk of littering results.

- Access and mine roads
  - The location and amount of roads will be finalized during the final mine planning phase.

  - No foreign materials will be used in the construction of these roads. The roads will be scraped to specific measures and maintained on a regular basis. During maintenance may the roads be sprayed with a non-polluting substance mixed in water to chemically bound dust particles to aid in dust reduction and even in some cases prevention.

  - The roads will be mainly used for mine traffic such as hauling of materials to different sites and employee travelling.

  - 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. For this reason the option of not implementing activity is ruled out in order to protect the surrounding environment as far as possible.

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 Basic Environmental Assessment Report / Environmental Management Programme Report will be subjected to a 30 day consultation period. Letters will be sent to the land owner and all statutory bodies informing them of the Section 102 being done with the amendment of Basic environmental Assessment Report / Environmental Management Report.

They will further be invited to comment of the Report submitted with all comments and feedback noted and submitted to the DMR.

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 REFENCE** in this report where the issues and or response were incorporated
AFFECTED PARTIES					
Landowner/s					
Mr W Coetzee (Grasveld Boerdery Trust)	X				
Lawful occupiers/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councilor					
Municipality					
Maqhaka Local Municipality	**X**				

Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA))					
Department Water and Sanitation	X				
Dept Agriculture, Fisheries and Forestry	X				
Communities					
Dept Land Affairs	X				
Traditional Leaders					
Dept Environmental Affairs	X				
Other Competent Authorities affected					
South African Heritage Resource Agency	**X**				
OTHER AFFECTED PARTIES					
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)

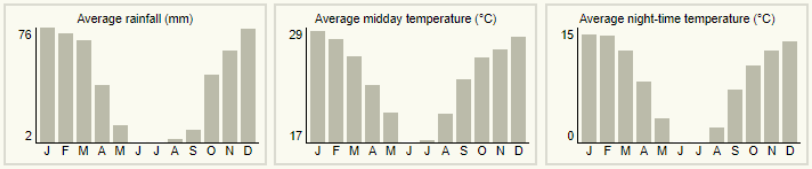
8.4.1 Baseline Environment

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 application area is situated on the Remainder of the farm Bospoort 558 and is approximately 16,2 km west from Kroonstad and 67.3 km south east from Bothaville..

  - Climate and rainfall: Kroonstad normally receives about 468mm of rain per year, with most rainfall occuring mainly during mid summer. The chart below (lower left) shows the average rainfall values for Kroonstad per month. It receives the lowest rainfall (2mm) in June and the highest (76mm) in January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Kroonstad range from 17°C in June to 28.7°C in January. The region is the coldest during June when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.



- Geology and soils: The soil is mostly deep, red to yellow, apedal, Aeolian sand, and often covering limestone.

- Physical environment: The surrounding area itself is relatively flat with streams flowing towards the Vals River while the application area is an un-rehabilitated mine area, in the bend of the river.

- Biological environment:
  - Fauna: The only species observed from time to time is nocturnal consisting of several rodent species..

  - Flora: The area falls within the Dry Sandy Highveld Grassland. Biome dominated by grassland with a few sweet Thorn *Vachellia karroo* trees occurring only occasionally along water courses. Diagnostic grasses include the grasses Lehmann's Lovegrass *Eragrostis lehmanniana,E. obtuse,* Small Buffalograss *Panicum coloratum* and *Stipagrostis uniplumis,* and the karroid dwarf shrub, Bitterkaroo *Pentzia globosa*. Other prominent grass species include Redgrass *Themeda triandra*, Weeping Lovegrass *Eragrostis curvula*, Hairy Lovegrass *E.trichophora, Anthephora pubescens,Aristita congesta, Digitaria eriantha* and *Cynodon dactylon.* A large variety of dicotyledonous forbs are also present, including *Chamaecrista mimosoides,* Poison Apple *Solanum panduriforme,* Tummy Bitterroot *Dicoma anomala, Helichrysum callicomum, H. cerastioides, Kyphocarpa angustifolia, Leucas capensis, Gnidia capitata, Blepharis angusta, Anthospermum hispidulum* and *Acalypha angustata.* West of Bloemfontein, affinity to Karoo vegetation can be seen in plant communities dominated by dwarf shrubs, including Fringed Karee *Rhus ciliate,* Anchorkaroo *Pentzia incana,* Bitterbush *Chrysocoma ciliate, Helichrysum pentzioides, Salsola kali, Felicia muricata, Walafrida densilflora, W. saxatilis* and *Nenax microphylla*

- Heritage environment: the heritage environment is non-existing as the area is already disturbed by previous mining and left un-rehabilitated.

- Socio-economic environment: Current Socio-economic conditions are those of self-sustaining farmers.

  Job opportunities are sparse within the town and region leaving many individuals unemployed without an income to support his/her family even a basic survival level. Due to this, crime levels increased within the community and Kroonstad town itself in the attempt for individuals to acquire money and goods for survival.

- Cultural environment: The cultural environment is that of normal farming activities.

8.4.1.2 Description of the current land uses

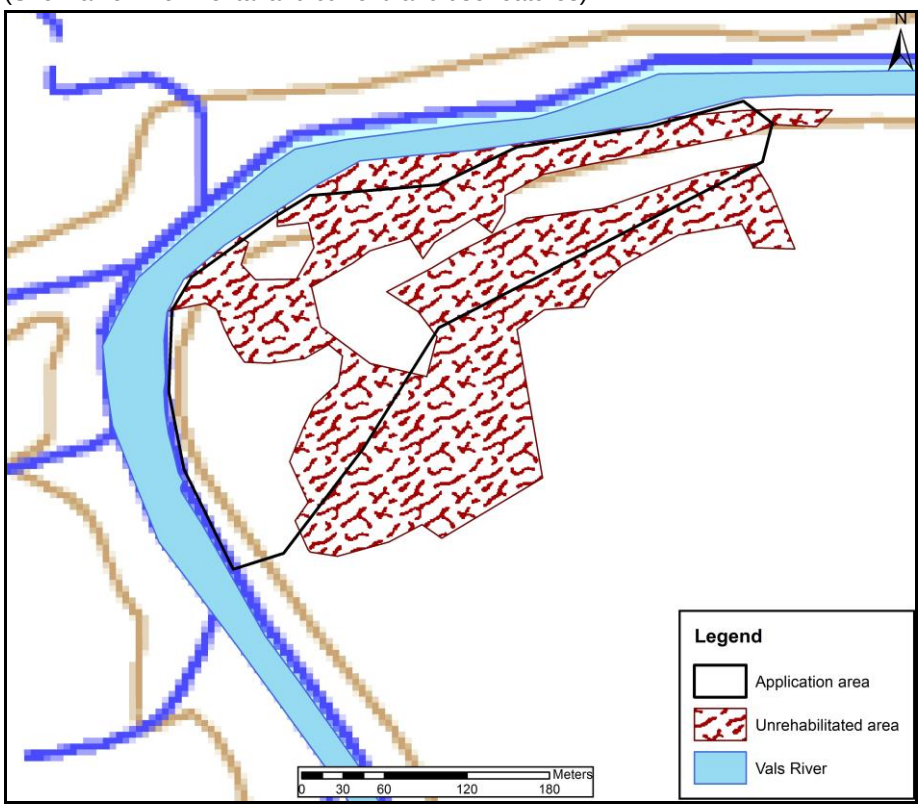
Currently the surrounding land is used for agricultural farming and livestock grazing while the application area was used for sand mining and left unrehabilitated.

8.4.1.3 Description of specific environmental features and infrastructure on the site

No specific environmental features exist within the proposed project area, which is situated within the bend of the Vals River that forms the northern border of the project area.

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	M	L
Escom line	Loss of vegetation + habitat	NOT APPLICABLE					
Plant construction	Loss of vegetation + habitat	M	L	L	M	M	L
Pipeline installation	Loss of vegetation + habitat	L	L	L	L	L	L
Offices	Loss of vegetation + habitat	L	L	L	L	M	L
2. OPERATIONAL PHASE IMPACTS							
Mining	Geological degradation	M	M	L	M	H	M
Disposal	Topographic change - dump	L	L	L	M	M	L
Mining	Topographic change - pit	M	L	L	L	M	H
Mining	Soil pollution - accidental spills and leakages	H	L	M	H	M	H
Operation	Soil pollution (workshop, store, parking)	H	L	M	H	M	H
Operation	Loss of grazing	L	L	L	M	L	M
Operation	Loss of/ disturbance to plants	L	L	L	M	L	M
Extraction of groundwater	Depressed water table	NOT APPLICABLE					
Operation	Problem plant invasion	L	H	M	M	M	M
Operation	Effect on animals	L	L	L	L	L	L
*Waste water disposal	Water regime (regional)	NOT APPLICABLE					
Mining	Noise (earth moving equipment and crushers)	M	L	L	L	M	L
Operation	Air quality: Dust - Transport	L	L	L	L	M	L
Operation	Air quality: Dust - Screen	L	L	L	L	M	L
Mining	Noise - blasting nuisance - regional	NOT APPLICABLE					
Mining	Noise - blasting nuisance -personnel	NOT APPLICABLE					
Mining, operation	Loss of archaeological items	H	H	L	L	L	H
Mining	Sensitive landscapes	M	L	L	M	M	M
Mining	Visual impact	L	M	L	L	M	M
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 and 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 mining operations and current proposed site plan shows to have an overall low to medium negative impact on the already disturbed property. Any alterations to the site layout or mining and mining related activities will not result in a lesser significant impact on the environment, but rather add to it.

The surrounding residing farmers may be minimally influenced by the mining operations in regard to noise and air quality loss. After considering alternative processes and site layout, these alterations did not proof any significant minimization of the impacts affecting the communities. It is rather recommended that stricter implementation and adherence to the mitigation measures is 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)

The current site plan will be planned after consultation with the land owner taking their concerns into consideration. Dust upliftment and mine created noise might be of the two major concerns where mitigation measures are the dampening of the mine roads, stabilizing mine stockpiles against wind erosion and keeping activities creating undue noise to more acceptable hours will be implemented.

8.9 Motivation where no alternative sites were considered

Alteration in the mine processes and site plan were considered, but ruled out during the early stages of the planning due to the fact that they proofed not to have any lesser affect on the environment. The current site layout and mine processes proposed for this operation proof to be the best possible option and layout with the minimal negative impacts in regard to the biophysical, socio-economic and cultural environment.

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 mine processes and site plan are considered and will be kept as originally proposed due to that any alterations proof not to significantly minimize impacts but may rather add to it

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 threat it poses. All activities are assessed against possible vegetation loss, topographic change, soil pollution, depressed water table, invader plant establishment, effect on animals, loss of water quality, noise and dust generation, destruction of possible archaeological and sensitive landscapes as well as waste disposal and area rehabilitation as well as re-establishment of vegetation.

The assessment of impacts are 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 have 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
Mining						
Excavation	Vegetation	Loss	Construction	Medium	Restriction of roads Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	Medium	Rehabilitation	Medium
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Vehicle maintenance	Low
	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low

	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		Low	Operations within business hours Silencer systems on vehicles	Low
	Air quality	Degradation		Low	Dampening of mine roads Speed restriction	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Topsoil and overburden	Vegetation	Loss	Construction	Low	Dump placement Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Low	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-

	Air quality	Degradation		Low	Protect against wind erosion	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Stockpiles	Vegetation	Loss	Construction	Low	Placement at plant site	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Dump placement Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Low	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Protect against wind erosion	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low

	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Waste dump	Vegetation	Loss	Construction	Low	Dump placement Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Medium	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Medium	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Protect against wind erosion	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive

	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Settling dam	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		High	Rehabilitation	Low
	Soil	Pollution		Medium	Dam stability check	Low
	Grazing	Loss		Medium	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	Water reticulation	Positive
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (waste water)	Loss		High	Water reticulation Waste water management	Positive
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		High	Rehabilitation Dam stability check Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Specified dam height	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections	Positive
	Safety risks	Waste disposal		High	Closure standards	Positive

Water storage dam	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		High	Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Medium	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	Water reticulation	Positive
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			-	-	-
	Water quality (storm water)	Loss		Low	Storm water management	Positive
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Rehabilitation Dam stability check Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive

Office site	Vegetation	Loss	Construction	Low	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste management Regular removal	Low
	Fauna			Low	Domestic waste management	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		Low	Operations within business hours	Low
	Air quality	Degradation		Low	Dampening of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Processing site	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation Topographical placement	Low
	Soil	Pollution		High	Immediate rehabilitation Continuous inspections Chemical handling protocol Equipment maintenance	Medium
	Grazing	Loss		Medium	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low
	Fauna			Low	-	Low
	Water quality	Loss		Medium	Soil pollution management Storm water management Waste water management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Medium	Dampening of exposed areas	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		High	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive

Ablution facility	Vegetation	Loss	Construction	Low	Implement near offices Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Facility maintenance Immediate clean-up	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna			Low	-	Low
	Water quality	Loss		Medium	Waste water management Regular septic tank draining	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Rehabilitation Facility maintenance	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Temporary workshop	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Adhere to mitigation measures Waste water management	Medium
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low
	Fauna			Low	Waste management	Low
	Water quality (storm water)	Loss		Medium	Waste water management Draining/cleaning of waste water	Low
	Noise	Elevated levels		Low	Operations during office hours	Low
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Storage facility	Vegetation	Loss	Construction	Medium	Vegetation clearing control Construct near offices Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Chemical handling protocol Chemical waste management Immediate rehabilitation	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna			Low	Chemical handling protocol Chemical waste management	Low
	Water quality (storm water)	Loss		Medium	Storm water management Soil pollution management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive

Vehicle storage	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Drip-tray installation Vehicle maintenance Waste management	Medium
	Grazing	Loss		Medium	Restriction to cleared areas Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low
	Fauna			Low	Waste management	Low
	Water quality	Loss		Low	Storm water management Soil pollution management Waste water management Draining/cleaning of waste water	Low
	Noise	Elevated levels		Low	Operations during office hours	Low
	Air quality	Degradation		Low	Dampening of exposed areas	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures Waste management	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive

	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Diesel storage	Vegetation	Loss	Construction	Medium	Vegetation clearing control Construct near vehicle parking Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Construct near vehicle parking Rehabilitation	Low
	Soil	Pollution		High	Regular maintenance Regular inspections Immediate rehabilitation Operational procedures	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	Regular inspections	Low
	Fauna			Medium	Soil pollution management Immediate rehabilitation	Low
	Water quality (storm water)	Loss		Medium	Soil pollution management Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	-	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures Waste management	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive

	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections	Positive
	Safety risks	Waste disposal		High	Closure standards	Positive
Domestic waste facility	Vegetation	Loss	Construction	Low	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change				
	Soil	Pollution		Low	Immediate clean-up Adhere to mitigation measures	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Domestic waste handling	Low
	Fauna			Medium	Domestic waste handling Immediate clean-up Adhere to mitigation measures	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Low	Immediate clean-up Domestic waste handling	Low
	Visual impact	Scenery loss		Low	Domestic waste handling Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Access and haul roads	Vegetation	Loss	Construction	Medium	Make use of existing roads Minimum roads possible Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Vehicle maintenance Regular inspections Immediate rehabilitation	Low
	Grazing	Loss		Medium	Restriction to roads Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to roads Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular inspections Removal of invader species	Low
	Fauna			Low	Silencer systems on vehicles Minimum traffic possible Speed restriction	Low
	Water quality (storm water)	Loss		Low	Soil pollution management Storm water control	Low
	Noise	Elevated levels		Low	Operations during office hours Silencer systems on vehicles	Low
	Air quality	Degradation		Low	Dampening of exposed areas Speed restrictions	Low
	Archaeological items	Loss		High	Restriction to roads Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Minimum roads possible Soil pollution management Rehabilitation	Low
	Visual impact	Scenery loss		Medium	Dust control measures Rehabilitation	Low

	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections 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
Heritage Impact Assessment	• A Paleontological Desktop Assessment should be considered • Any fossil remains exposed during construction should be carefully safeguarded and the relevant heritage resources authority notified. • Should any subsurface paleontological, archaeological or historical material or burials be exposed during construction activities should all activities be suspended and the archaeological specialist be notified immediately.	X X	

Ecological and Wetland delineation Report	• The mining area, including excavations and stockpiles, should be adequately protected from contributing sediment to the river • Weed control be judiciously and continually practiced • The rehabilitation of the mining area should be comprehensive and should include monitoring or rehabilitation after cessation of mining	X X X	

Attach copies of Specialist Reports as appendices

11. Environmental impact statement

11.1 Summary of the key findings of the environmental impact assessment

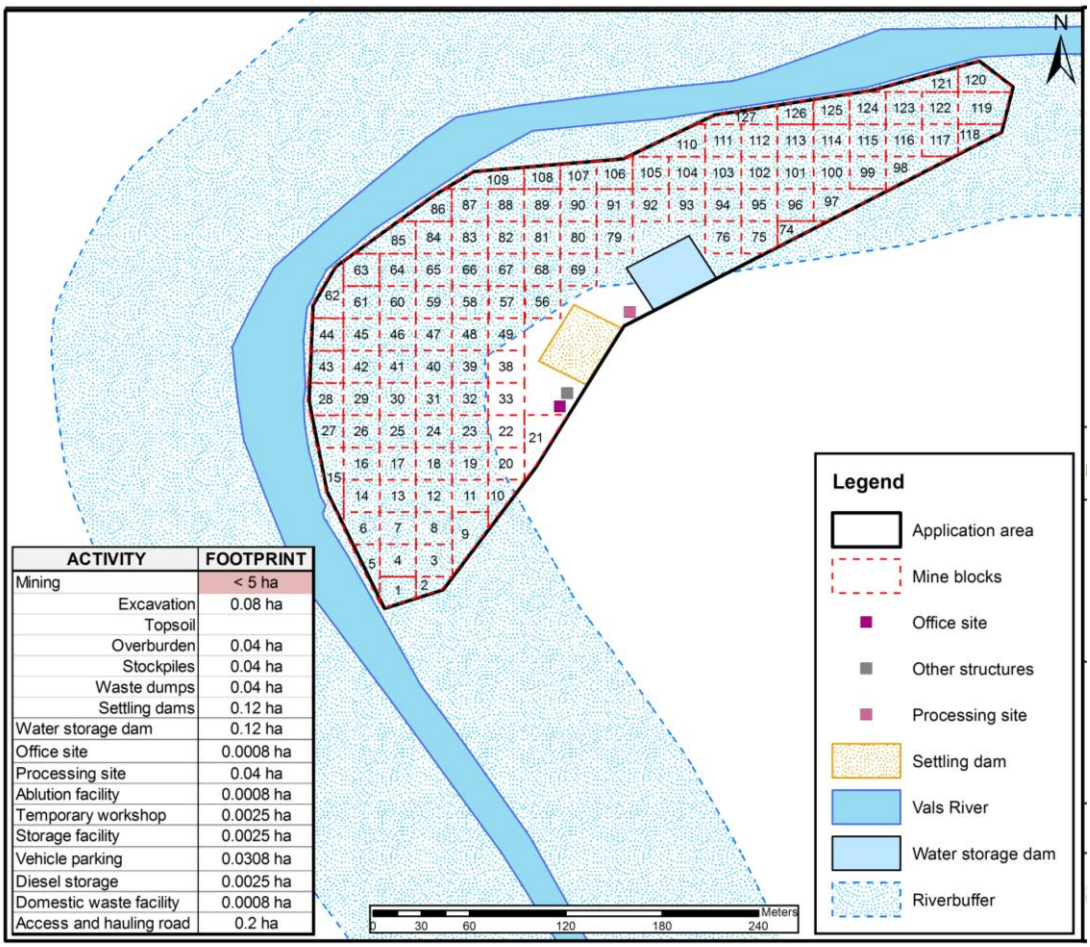
During the conduction of the Environmental Impact Assessment several key element regarding the proposed project came under attention:

- With due consideration towards the negative impact the mining activities pose on the environment with the knowledge of the current status of the environment, it can be concluded that the mining activities will not have a detrimental negative impact, but contribute to the rehabilitation of the already disturbed area.

- The mining activities will contribute to the employment opportunities as well as an economic growth within the communities are immediate area

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.)



ACTIVITY	FOOTPRINT
Mining	< 5 ha
Excavation	0.08 ha
Topsoil	
Overburden	0.04 ha
Stockpiles	0.04 ha
Waste dumps	0.04 ha
Settling dams	0.12 ha
Water storage dam	0.12 ha
Office site	0.0008 ha
Processing site	0.04 ha
Ablution facility	0.0008 ha
Temporary workshop	0.0025 ha
Storage facility	0.0025 ha
Vehicle parking	0.0308 ha
Diesel storage	0.0025 ha
Domestic waste facility	0.0008 ha
Access and hauling road	0.2 ha

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 operation 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 collection and no open fire policy

- Prevention of soil pollution due to chemical spillage
  - Regular maintenance of earth moving equipment and 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 caused by mine machinery, mineral processing and earth moving equipment.
  - Undue noise levels will be kept to acceptable hours.
  - Modification of earth moving 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.
  - Erosion protection of mine dumps.

- Surface and ground water quality degradation
  - Adherence to water management guidelines
  - Specific water facility construction.
  - Storm water control.
  - Measurement of water level and quality.
  - Implementation of ground water monitoring system.

- 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 mining 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 handed to 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 mining operations should be strongly considered for authorization as mine development may will result in the upliftment of local communities, economic growth of the town, region and possibly 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 EMPr are the adherence to all mitigation measures as stipulated within the 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

.

- Where necessary must a soil bed be provided and sawn with indigenous plant species to ensure re-establishment of vegetation.

- A two to three year monitoring programme must be implemented to ensure the success of vegetation re-establishment and the elimination of invader / pioneer 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 applicant, Pitso 7 Star sand en Klip (Pty) Ltd, 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: PITSO 7STAR SAND EN KLIP (PTY) ltd — Location: BOSPOORT 558 — Date: Feb-19

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	400	R 16.40	1	1	R 6 560.00
2 (A)	Demolition of steel buildings and structures	m2	25	R 228.40	1	1	R 5 710.00
2(B)	Demolition of reinforced concrete buildings and structures	m2	158	R 336.59	1	1	R 53 181.22
3	Rehabilitation of access roads	m2	2 000	R 40.87	1	1	R 81 740.00
4 (A)	Demolition and rehabilitation of electrified railway lines	m		R 396.70	1	1	R -
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m		R 216.38	1	1	R -
5	Demolition of housing and/or administration facilities	m2	8	R 456.80	1	1	R 3 654.40
6	Opencast rehabilitation including final voids and ramps	ha	0.08	R 232 488.77	1	1	R 18 599.10
7	Sealing of shafts adits and inclines	m3		R 122.62	1	1	R -
8 (A)	Rehabilitation of overburden and spoils	ha	0.12	R 159 640.69	1	1	R 19 156.88
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0.12	R 198 829.59	1	1	R 23 859.55
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		R 577 495.38	1	1	R -
9	Rehabilitation of subsided areas	ha	0.14	R 133 675.03	1	1	R 18 714.50
10	General surface rehabilitation	ha	0.0016	R 126 462.35	1	1	R 202.34
11	River diversions	ha		R 126 462.35	1	1	R -
12	Fencing	m		R 144.25	1	1	R -
13	Water management	ha	0.24	R 48 084.54	1	1	R 11 540.29
14	2 to 3 years of maintenance and aftercare	ha	0.9607	R 16 829.59	1	1	R 16 168.19
15 (A)	Specialist study	Sum				1	R -
15 (B)	Specialist study	Sum				1	R -
					Sub Total 1		R 259 086.48

1	Preliminary and General	R 31 090.38	weighting factor 2: 1	R	31 090.38
2	Contingencies	R 25 908.65		R	25 908.65
			Subtotal 2	R	316 085.50
			VAT (15%)	R	44 251.97
			Grand Total	**R**	**360 337.47**

Actual mining and the removal of sand material is going to be over most of the areas, with the mining related activities and structures place on already disturbed/mined land as mining progresses. This results in that the total disturbed area cannot be calculated according the financial provision table.

The amount of R 360 337.47 proofs to be exceptionally high for the scale of mining to be conducted as well as the stat of environment on which the mining will be conducted. The applicant is a small miner and therefor it should be motivated that the financial provision payable is as for the small miners with an amount of **R 180 168.74**.

18.1 Explain how the aforesaid amount was derived

Although the amount of R 360 337.47 was calculated using the Department of Mineral Resources' approved Financial Provision Quantum Calculation table, the total amount payable should be **R 180 168.74** as per motivation in Section A18 of this document.

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 the Financial and Technical Competence Report 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 mining activities will contribute to the local economy via its impact on job creation, total disposable income and value-added activities. The mine will support business activity in the local economy for the duration of the mine.

Five measures of economic impacts can be used to demonstrate the potential positive effect of the proposed prospecting operation on the local economy:

- Employment – the extent of employment can be measured as number of jobs or in terms of full time equivalents
- Payroll income – the gross remuneration of employees in terms of salaries and wages
- Capital Expenditure (CAPEX) – the total amount spent on the purchasing of fixed assets and total spent on construction

- Operating expenditure and maintenance (OPEX) – the total amount spent locally by businesses on goods and services, excluding salaries and wages as well as rents or interest.
- Revenue – The total value of sales arising from business activity at the mine

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 proposed project area is situated over an area currently subjected to mining activities. It is not foreseen that any archaeological sites of any significance exist.

Should any fossils, historic artefacts and/or heritage significant objects be discovered and/or unearthed in the process of mining, the Permit Holder will contact a South African Museum or University which employs the necessary specialist for the necessary studies and/or savage operation 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 knowledge of the area on which the proposed project is situated. An extensive field visit for investigation was executed, and 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 mining and rehabilitation practices.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft environmental management programme

1.1 Details of the EAP

(Confirm that the requiment for the provision of the details and expertise of the EAP are already included in PART A, Section 1.1 herin 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
Physical address:	19 Park Road, Belgravia, Kimberley, 8301
Postal address:	PO Box 3226, Kimberley, 8300
Tel no:	053 831 7634
Cell:	072 141 4164
Fax No:	086 606 6315
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.

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 Consultant and successfully completed an Environmental Impact Assessment on the farm Groot Derm 10, Alexanderbay (2012). During the year 2015 till date she undergone company name changes and is now consulting under LW Consultants.

Successful projects under the new DMR and NEMA regulations:

- EIA/EMPr Mining Right Roodepan 70 (2015)
- BEAR/EMPr Prospecting Right Bergplaats 502 (2016)
- BEAR/EMPr Mine Permit Longlands 350 (2016)
- EIA/EMPr Mining Right Nooitgedacht 66 (2017)
- BEAR/EMPr Mine Permit Rooifontein 1722 (2017)
- Rehabilitation Mining Right NWA Schmidtsdrift (2018)
- BEAR/EMPr Mine Permit Middenspruit 151 (2018)
- BEAR/EMPr Mine Permit Bospoort 558 (2018)

Successful projects abroad under their specified regulations:

- EIA/EMPr Mining Chimanimani, Zimbabwe (2018)

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
Mining						
Excavation	Vegetation	Loss	Construction	Medium	Restriction of roads Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	Medium	Rehabilitation	Medium
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Vehicle maintenance	Low
	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low

	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		Low	Operations within business hours Silencer systems on vehicles	Low
	Air quality	Degradation		Low	Dampening of mine roads Speed restriction	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Topsoil and overburden	Vegetation	Loss	Construction	Low	Dump placement Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Low	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Protect against wind erosion	Low

	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Stockpiles	Vegetation	Loss	Construction	Low	Placement at plant site	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Dump placement Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Low	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Protect against wind erosion	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low

	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Waste dump	Vegetation	Loss	Construction	Low	Dump placement Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		-	-	-
	Grazing	Loss		Medium	Dump placement Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Dump placement Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (storm water)	Loss		Medium	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	Protect against wind erosion	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dump height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Settling dam	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		High	Rehabilitation	Low
	Soil	Pollution		Medium	Dam stability check	Low
	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	Water reticulation	Positive
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			Low	-	Low
	Water quality (waste water)	Loss		High	Water reticulation Waste water management	Positive
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		High	Rehabilitation Dam stability check Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Specified dam height	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections	Positive
	Safety risks	Waste disposal		High	Closure standards	Positive
Water storage dam	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		High	Rehabilitation	Low
	Soil	Pollution		-	-	-

	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	Water reticulation	Positive
	Vegetation	Invader plants		Low	Regular removal Report to environmental officer	Low
	Fauna			-	-	-
	Water quality (storm water)	Loss		Low	Storm water management	Positive
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Rehabilitation Dam stability check Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Specified dam height Rehabilitation	Low
	Waste	Disposal	Decommissioning	Low	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Office site	Vegetation	Loss	Construction	Low	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Immediate rehabilitation Regular inspections	Low
	Grazing	Loss		Low	Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Low	Restriction to cleared areas Rehabilitation	Low

	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste management Regular removal	Low
	Fauna			Low	Domestic waste management	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		Low	Operations within business hours	Low
	Air quality	Degradation		Low	Dampening of exposed area	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Low	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Processing site	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation Topographical placement	Low
	Soil	Pollution		High	Immediate rehabilitation Continuous inspections Chemical handling protocol Equipment maintenance	Medium
	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low

	Fauna			Low	-	Low
	Water quality	Loss		Medium	Soil pollution management Storm water management Waste water management	Low
	Noise	Elevated levels		Low	Operations within office hours	Low
	Air quality	Degradation		Medium	Dampening of exposed areas	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		High	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Ablution facility	Vegetation	Loss	Construction	Low	Implement near offices Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Facility maintenance Immediate cleanup	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna			Low	-	Low
	Water quality	Loss		Medium	Waste water management Regular septic tank draining	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-

	Sensitive landscape	Destruction		Low	Rehabilitation Facility maintenance	Low
	Visual impact	Scenery loss		Low	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Temporary workshop	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Medium	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Adhere to mitigation measures Waste water management	Medium
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low
	Fauna			Low	Waste management	Low
	Water quality	Loss		Medium	Waste water management Draining/cleaning of waste water	Low
	Noise	Elevated levels		Low	Operations during office hours	Low
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low

	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive
Storage facility	Vegetation	Loss	Construction	Medium	Vegetation clearing control Construct near offices Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Medium	Chemical handling protocol Chemical waste management Immediate rehabilitation	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Low	Regular removal	Low
	Fauna			Low	Chemical handling protocol Chemical waste management	Low
	Water quality (storm water)	Loss		Medium	Storm water management Soil pollution management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures	Low
	Visual impact	Scenery loss		Medium	Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive

Vehicle storage	Vegetation	Loss	Construction	Medium	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Immediate rehabilitation Regular inspections Drip-tray installations Vehicle maintenance Waste management	Medium
	Grazing	Loss		Medium	Rehabilitation Restriction to cleared areas	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular removal	Low
	Fauna			Low	Waste management	Low
	Water quality	Loss		Low	Storm water management Soil pollution management Waste water management Draining/cleaning of waste water	Low
	Noise	Elevated levels		Low	Operations during office hours	Low
	Air quality	Degradation		Low	Dampening of exposed areas	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures Waste management	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive

	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive
Diesel storage	Vegetation	Loss	Construction	Medium	Vegetation clearing control Construct near vehicle parking Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Construct near vehicle parking Rehabilitation	Low
	Soil	Pollution		High	Regular maintenance Regular inspections Immediate rehabilitation Operational procedures	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	Regular inspections	Low
	Fauna			Medium	Soil pollution management Immediate rehabilitation	Low
	Water quality (storm water)	Loss		Medium	Soil pollution management Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		Low	-	Low
	Archaeological items	Loss		High	Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Rehabilitation Adhere to mitigation measures Waste management	Low
	Visual impact	Scenery loss		Medium	Rehabilitation Waste management	Low
	Waste	Disposal	Decommissioning	High	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive

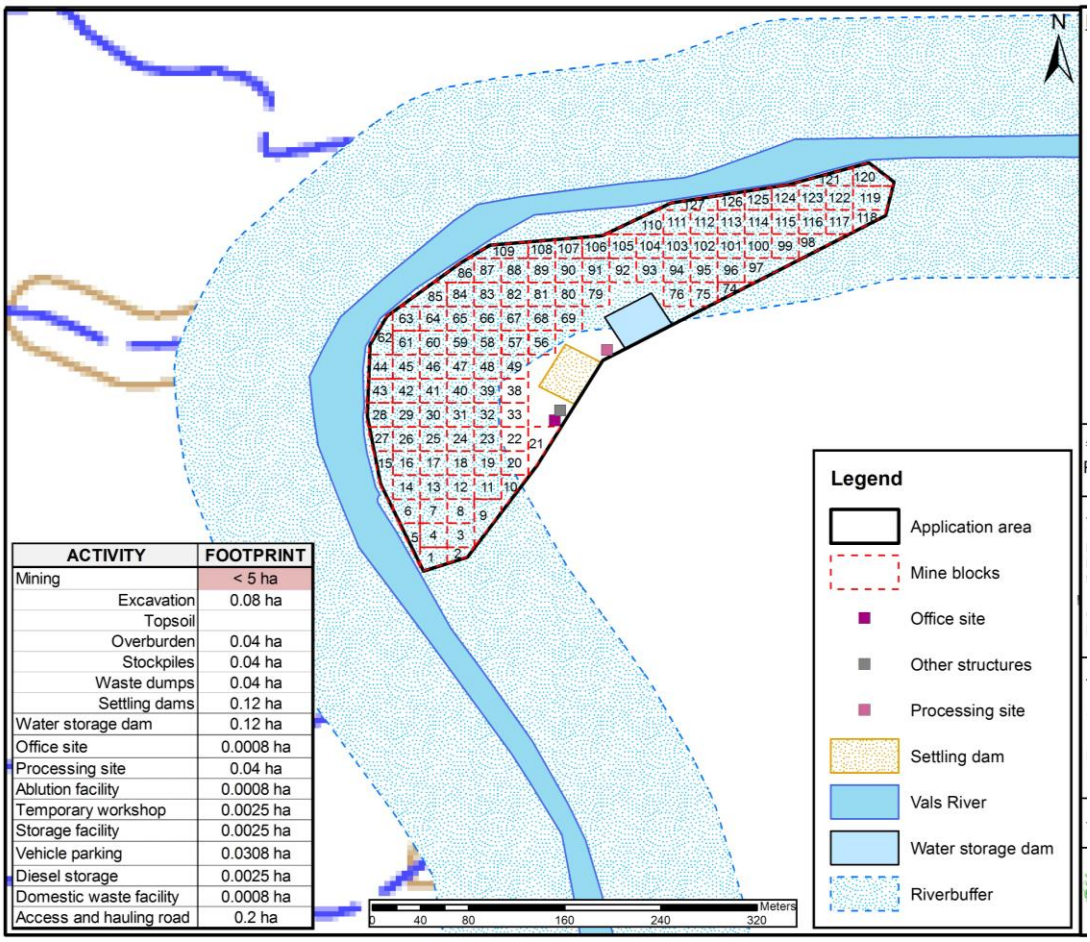
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections	Positive
	Safety risks	Waste disposal		High	Closure standards	Positive
Domestic waste facility	Vegetation	Loss	Construction	Low	Vegetation clearing control Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		-	-	-
	Soil	Pollution		Low	Immediate clean-up Adhere to mitigation measures	Low
	Grazing	Loss		Low	Rehabilitation	Low
	Vegetation	Loss/disturbance		Low	Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Regular removal Domestic waste handling	Low
	Fauna			Medium	Domestic waste handling Immediate clean-up Adhere to mitigation measures	Low
	Water quality (storm water)	Loss		Low	Storm water management	Low
	Noise	Elevated levels		-	-	-
	Air quality	Degradation		-	-	-
	Archaeological items	Loss		-	-	-
	Sensitive landscape	Destruction		Low	Immediate clean-up Domestic waste handling	Low
	Visual impact	Scenery loss		Low	Domestic waste handling Rehabilitation	Low
	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Low	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Low	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Low	Closure standards	Positive

Access and haul roads	Vegetation	Loss	Construction	Medium	Make use of existing roads Minimum roads possible Rehabilitation	Low
	Geological	Loss	Operational	-	-	-
	Topographic	Change		Low	Rehabilitation	Low
	Soil	Pollution		High	Vehicle maintenance Regular inspections Immediate rehabilitation	Low
	Grazing	Loss		Medium	Restriction to roads Rehabilitation	Low
	Vegetation	Loss/disturbance		Medium	Restriction to cleared areas Rehabilitation	Low
	Water table	Depressed		-	-	-
	Vegetation	Invader plants		Medium	Domestic waste handling Regular inspections Removal of invader species	Low
	Fauna			Low	Silencer systems on vehicles Minimum traffic possible Speed restriction	Low
	Water quality (storm water)	Loss		Low	Soil pollution management Strom water control	Low
	Noise	Elevated levels		Low	Operations during office hours Silencer systems on vehicles	Low
	Air quality	Degradation		Low	Dampening of exposed areas Speed restrictions	Low
	Archaeological items	Loss		High	Restriction to roads Avoid sites of significance	-
	Sensitive landscape	Destruction		Medium	Minimum road possible Soil pollution management Rehabilitation	Low
	Visual impact	Scenery loss		Medium	Dust control measures Rehabilitation	Low

	Waste	Disposal	Decommissioning	Medium	Management standards	Positive
	Re-vegetation	Re-growth		Medium	Regular inspections	Positive
	Exposed area Rehab	Re-vegetation	After closure	Medium	Regular inspections Removal of invader species	Positive
	Safety risks	Waste disposal		Medium	Closure standards	Positive

1.3 Composite 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)



ACTIVITY	FOOTPRINT
Mining	< 5 ha
Excavation	0.08 ha
Topsoil	
Overburden	0.04 ha
Stockpiles	0.04 ha
Waste dumps	0.04 ha
Settling dams	0.12 ha
Water storage dam	0.12 ha
Office site	0.0008 ha
Processing site	0.04 ha
Ablution facility	0.0008 ha
Temporary workshop	0.0025 ha
Storage facility	0.0025 ha
Vehicle parking	0.0308 ha
Diesel storage	0.0025 ha
Domestic waste facility	0.0008 ha
Access and hauling road	0.2 ha

1.4 Description 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 mining activities to such an extent that the post-mining environment is almost in the same condition as the surrounding environment.

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

1.4.2 Volumes and rate of water use required for the operation

The sand washing process as a whole required approximately 1 026 m³ of water for a day's operational cycle. This process includes wet screens and a sand-screw washing plant

Other mining related activities such as the ablution facilities and office buildings also require the use of water, but the amount of water needed are still unknown at this stage.

1.4.3 Has a water use licence has been applied for?

The appointed EAP with co-operation from the project applicant is in the final stages of applying for water use authorization. Requirements to apply for such authorization include the Basic Environmental Assessment Report / Environmental Management Programme as well as the issued permit.

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
Mining					
Excavation	Construction	Total: <5 ha Per site: 0.08 ha	• The 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 • No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life • Conservation of indigenous vegetation species	• Commencement of activity • Commencement of activity • Commencement of activity • Integrated into activity

			• Overburden and topsoil (where possible) will be stored separately next to the excavation.	• Safeguarding of natural seedbed to ensure successful rehabilitation	• Commencement of activity • Integrated into activity
	Operational		• When working on equipment outside the workshop the appropriate measures needs to be implemented to prevent chemical spillage	• Avoid hydro-carbon fluid spillage as far as possible	• Integrated into activity
			• Old diesel and related chemicals must be discarded within appropriate marked close containers and stored in the chemical storage facility till removal thereof	• Avoid 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 thereof.	• Avoid ground sterilization and/or disturbance of vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Stored soil will be evenly spread to the recover the area	• Finalizing rehabilitation and ensure indigenous vegetation regrowth from natural seedbed	• Integrated into activity • Decommissioning of activity
			• The area must be continuously inspected for spillages and remediated immediately	• Minimizing the probability soil pollution, ground sterilization and/or disturbance of vegetation regrowth.	• Integrated into activity
			• All vehicle traffic are restricted to the roads and demarcated traffic areas	• Avoiding vegetation loss and ground compactions, which can lead to ground erosion	• Commencement of activity • Integrated into activity

			• Washing of equipment shall be restricted to urgent maintenance requirements only.	• Preventing soil pollution and ground sterilization as far as possible	• Integrated into activity
			• No indigenous shrubs or trees will unnecessarily uprooted and used for fire wood	• Minimizing unnecessary vegetation loss and species conservation	• Commencement of activity • Integrated into activity
			• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended.	• Conservation of indigenous vegetation through the suppression of invader species growth	• Integrated into activity • Decommissioning of activity • Closure 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 • Decommissioning of activity
			• A site will be identified and colour coded water tanks will be erected for safe human consumption.	• Basic Employment Act requirement insuring fresh water availability for consumption	• Commencement of activity • Integrated into activity
			• The mine shall be responsible for compliance with the relevant legislation in respect to noise.	• Minimizing noise disturbance having an impact on residents 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

			• Every vehicle in operation will be equipped with a silencer on the exhaust system.	• Minimizing noise disturbance having an impact on residents and fauna	• Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying of water.	• 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 is the mine still ultimately responsible for environmental conservation	• Integrated into activity • Decommissioning of activity
			• The mine shall ensure that all vehicle and heavy vehicle 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 sever vegetation loss	• 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 will 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 • Decommissioning of activity
	Decommissioning		• The excavation will be filled with waste material and soil, with the topsoil and overburden in the correct order.	• Environmental closure objective to create a sustainable environment after operation	• Integrated into activity • Decommissioning of activity
			• All chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Rehabilitation will be finalized by the spreading of soil and planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth 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

Topsoil and Overburden	Construction	? 0.04 ha	• The 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	• Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life	• Commencement of activity • Integrated into activity • Commencement of activity
	Operational		• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended.	• Conservation of indigenous vegetation through the suppression of invader species growth	• 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, 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 is the mine still ultimately responsible for 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
	Decommissioning		• Use dump material to finalize rehabilitation	• Environmental closure objective to use natural seedbed for final rehabilitation	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Rehabilitation will be finalized by planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Stockpiles	Construction	0.04 ha	• Dump placement at plant site	• Minimizing overall footprint and preventing unnecessary vegetation loss	• Commencement of activity
			• The only necessary vegetation will be cleared	• Minimizing 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 conservation in preventing loss of animal life	• Commencement of activity
	Operational		• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended.	• Conservation of indigenous vegetation through the suppression of invader species growth	• 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 • Decommissioning of 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 is the mine still ultimately responsible for 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

	Decommissioning		• Rip and rehabilitate all compacted areas. • Rehabilitation will be finalized by planting of indigenous species with regular inspection for the removal of invader species.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment	• Integrated into activity • 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Waste Dumps	Construction	0.04 ha	• Placement of dump on already disturbed area • The 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	• Minimizing overall footprint and preventing unnecessary vegetation loss • Minimizing vegetation loss • Promote animal conservation in preventing loss of animal life	• Commencement of activity • Integrated into activity • Commencement of activity • Commencement of activity
	Operational		• 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

			• Littering of any product, including cigarette buds, at any operational site shall be seen as an offence and will not be tolerated • The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• Avoid possible animal suffering and scenery degradation • With all measures in place is the mine still ultimately responsible for environmental conservation	• Commencement of activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity
	Decommissioning		• Rip and rehabilitate all compacted areas. • Rehabilitation will be finalized by planting of indigenous species with regular inspection for the removal of invader species.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment	• Integrated into activity • 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Settling dam	Construction	0.12 ha	• The only necessary vegetation will be cleared • On vegetation clearing should any nest with chicks or eggs be discovered shall a local nature conservation offices be contacted to relocate the species	• Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life	• Commencement of activity • Commencement of activity

			• It should be ensured that the dams are sealed and leak proof	• Preventing drainage of waste water into ground water systems as well as silt leaking into environment	• Commencement of activity • Integrated into activity
			• Facility will have the necessary danger signs in place	• Health and Safety as well as NEMA and Mineral Regulation requirement, avoiding accidental loss of life	• Commencement of activity • Integrated into activity • Decommissioning of activity
	Operational		• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended	• Conservation of indigenous vegetation through the suppression of invader species growth	• 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 • Decommissioning of 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 failure by his employees or suppliers	• With all measures in place is the mine still ultimately responsible for environmental conservation	• Integrated into activity • Decommissioning of activity
			• The structure must be continuously inspected for faults	• Avoiding dam wall breaking causing environmental destruction	• Integrated into activity

	Decommissioning		• Dried tailings will be used within the soil mixture during final rehabilitation. • Rehabilitation will be finalized by the planting of indigenous species with regular inspection for the removal of invader species • On closure the Department of Water and Sanitation will be consulted in aiding with the rehabilitation of the facility	• Rehabilitation standard, using dried tailing as a soil to promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment • Rehabilitation standard, ensuring the correct and successful waste water management procedures	• Integrated into activity • Decommissioning of activity • Decommissioning of activity • Decommissioning 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
Water storage	Construction	0.12 ha	• The only necessary vegetation will be cleared • On vegetation clearing should any nests with chicks or eggs be discovered a local nature conservation office shall be called to relocate the species • It should be ensured that the dams are sealed and leak proof	• Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life • Preventing drainage of water and water loss as far as possible	• Commencement of activity • Commencement of activity • Commencement of activity • Integrated into activity

			• The facility will be clearly marked with all regulatory signs, to indicate a potential dangerous zone.	• Health and Safety requirement preventing accidental loss of life	• Commencement of activity • Integrated into activity
	Operational		• No indigenous shrubs or trees will be unnecessarily uprooted and used for fire wood.	• Minimizing unnecessary vegetation loss and promote the preservation of species	• Integrated into activity
			• If any invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended	• Conservation of indigenous vegetation through the suppression 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 • Decommissioning of 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.	• 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 is the mine still ultimately responsible for environmental conservation	• Integrated into activity • Decommissioning of activity
			• The structure must be continuously inspected for faults.	• Avoiding dam wall breaking causing environmental destruction	• Integrated into activity

	Decommissioning		• Compacted areas will be ripped and rehabilitated • Rehabilitation will be finalized by the spreading of soil where necessary and planting if indigenous species with the regular inspection for the removal of invader species • On closure the Department of Water and Sanitation will be consulted in aiding with the rehabilitation of the facility	• Preventing erosion channels and promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment • Rehabilitation standard ensuring the correct and successful water management procedures	• Decommissioning of activity • Decommissioning of activity • Decommissioning of activity
	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation regrowth rate and the successful establishment of indigenous vegetation	• Environmental closure objective to create a sustainable environment after operation	• Closure of activity
Office Block	Construction	0.0008 ha	• All buildings will consist of appropriate signs indicating function and potential dangers • The 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 • No indigenous shrubs or trees will be unnecessarily uprooted	• Regulatory requirement - All buildings must indicate function • Minimizing unnecessary vegetation loss • Promote animal conservation in minimizing loss of animal life • Minimizing vegetation loss and promote the preservation of species	• Commencement of activity • Commencement of activity • Commencement of activity • Commencement of activity • Integrated into activity

	Operational		• Suppression of dust on cleared areas will occur by the spraying of water.	• 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	• Commencement of activity • Integrated into activity
			• The mine shall be responsible for any cleaning up resulting from the failure by his employees or suppliers.	• Will all measures in place is it 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 vegetation loss and endangering life	• Commencement of activity • Integrated into 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 chemical spills will be rehabilitated immediately	• Avoid ground sterilization and/or disturbance of vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity

			• Rehabilitation will be finalized by the spreading of tailing soil where necessary and planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth 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
Processing Site	Construction	0.04 ha	• The area will consist of appropriate signs indicating function and potential dangers • The 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	• Health and Safety requirement preventing employee injury • Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life	• Commencement of activity • Integrated into activity • Commencement of activity • Commencement of activity
	Operational		• When working on equipment outside the workshop the appropriate measures needs to be implemented to prevent chemical spillage	• Avoid hydro-carbon fluid spillage as far as possible	• Integrated into activity

			• Old diesel and related chemicals must be discarded within appropriate marked close containers and stored in the chemical storage facility till removal thereof.	• 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 thereof	• Avoid ground sterilization and/or disturbance of vegetation regrowth	• Integrated into activity
			• Area must be continuously inspected for spillages and remediated immediately	• Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation regrowth	• 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
			• Washing of equipment shall be restricted to urgent maintenance requirements only	• Preventing soil pollution and ground sterilization as far as possible	• Integrated into activity
			• No indigenous shrubs or trees will be unnecessarily uprooted and used for fire wood	• Minimizing unnecessary vegetation loss and promote the preservation of species	• Commencement of activity • Decommissioning of activity
			• If invader species are observed the reporting thereof to the rehabilitation site manager is highly recommended	• Conservation of indigenous vegetation through the suppression of invader species growth	• 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 • Decommissioning of activity
			• A site will be identified and colour coded water tanks will be erected for safe human consumption	• Basic Employment Act requirement insuring fresh water availability for consumption	• Commencement of activity • Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying of chemical bounded water.	• Health and Safety as well as NEMA requirement ensuring good air quality and preventing related lung illnesses.	• 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 is the mine still ultimately responsible for 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 leads to run-away field fires causing severe vegetation loss	• Integrated into activity
			• Hard hats, earplugs, safety glasses, dust masks, gloves, hard point boots, reflector vests and reflective overalls in compulsory before entering this area	• Health and Safety requirement preventing employee injury and/or possible loss of life	• Commencement of activity • Integrated into activity • Decommissioning 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 • Decommissioning 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 chemical spills will be rehabilitated immediately	• Prevent the degradation of environmental health	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity

			• Rehabilitation will be finalized by the spreading of tailing soil where necessary and planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Ablution	Construction	0.0008 ha	• The 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 conservation in preventing loss of animal life	• Commencement of activity
			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing vegetation loss and promote the preservation of species	• Commencement of activity
			• Concealed septic tanks must be installed above ground, where it can be regularly inspected for leakage	• For ease of maintenance and leakage can be seen immediately	• Commencement of activity

	Operational		• Ablution blocks shall be at all times be sanitized • Sanitary bins will be provided within the building, no sanitary material will be allowed within the septic tanks • All human waste and related waste will be contained within septic tanks installed for this purpose • Septic tanks and chemical toilets will be chemically treated and maintained by a contracting agency • The local municipality may be contracted on the draining of the septic tank and the removal of its contents to the sewerage plant of their choice • Sanitary material within the bins provided will be closed in colour plastics and disposed of with domestic waste • Employees will be advised to stay clear from any wild animals or reptiles and not to disturb or provoke them in any manner.	• Health and Safety issue, avoiding the spread of human diseases • Preventing the burst of the septic tank as well as littered materials creating health risks • Promoting environmental health by avoiding the spread of diseases and parasites • Health and Safety related preventing spillage and ground contamination. • Basic Employment and Sanitation protocol providing a healthy environment • Preventing littered materials creating health risks and separation from normal domestic wastes • Preventing unnecessary stress in animals, loss of life and/or employee injury	• Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity • Integrated into activity • Integrated into activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • 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 unnecessary environmental 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 is the mine still ultimately responsible for 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
			• The entrance will be clearly marked will 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 chemical spills will be rehabilitated immediately	• Prevent the degradation of environmental health	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Decommissioning of activity
			• Rehabilitation will be finalized by the spreading soil where necessary and planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth and promoting indigenous species establishment	• Decommissioning of activity • Closure of activity

			• On closure Department of Water Affairs will be consulted in aiding with the rehabilitation of the facility	• Rehabilitation standard, ensuring the correct and successful waste water management procedures	• Decommissioning of activity
	After closure		• A 2 to 3 year after care plan is initiated to ensure a satisfying vegetation regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Temporary workshop	Construction	0.0025 ha	• To be constructed near in and in the same region as the plant site	• Minimizing overall footprint of operations	• Commencement of activity
			• The workshop will be a barnlike structure with a cement floor constructed with a gradient to allow run-off water to be contained in a sump	• Legislative standards as well as measures to prevent soil pollution and sterilization of ground	• Commencement of activity
			• All buildings will consist of appropriate signs indicating function and potential dangers	• Legislative requirement to avoid employee injury	• Commencement of activity
			• The only necessary vegetation will be cleared	• Minimizing unnecessary vegetation loss	• Commencement of activity
			• On vegetation clearing should any nests with chicks or effs be discovered must a local nature conservation officer be called to relocate the species	• Promote animal conservation in minimizing loss of animal life	• Commencement of activity
			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing vegetation loss and promote the preservation of species	• Commencement of activity • Integrated into activity

	Operational		• All chemical spillage on the floor will be treated to break them down into the natural components before cleaning the floor	• Chemical pollution control and avoiding ground contamination	• Integrated into activity • Decommissioning of activity
			• All diesel, oil and/or related chemicals must be discarded in an appropriate marked closed container and stored till the removal thereof	• Avoiding hydro-carbon fluid spillage as far as possible	• Integrated into activity • Decommissioning of activity
			• Unusable vehicle and machinery parts will be discarded in the container supplied	• Avoid ground sterilization and/or disturbance of vegetation regrowth	• Integrated into activity
			• Suppression of dust on cleared areas will occur by the spraying of water	• Preventing and/or minimizing dust upliftment protecting the air quality as far as possible	• Integrated into activity
			• Littering on 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 is it 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 min'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 and endangering the lives	• Commencement of activity • Integrated into activity
	Decommissioning		• All structures will be broken down and removed from site • All chemical spills will be rehabilitated immediately • Compacted areas will be ripped and rehabilitated • Regular inspection for the removal of invader species	• Rehabilitation needs to comply with closure objectives • Avoid ground sterilization and/or disturbance of vegetation regrowth • Remedying compacted areas to prevent erosion and promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment	• Decommissioning of activity • Integrated into activity • Decommissioning of activity • 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 regrowth rate and the successful establishment of indigenous vegetation	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Storage facility	Construction	0.0025 ha	• All buildings will consist of appropriate signs indicating function and potential dangers • The 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	• Legislative requirement to avoid employee injury • Minimizing unnecessary vegetation loss • Promote animal conservation in minimizing loss of animal life	• Commencement of activity • Commencement of activity • Commencement of activity

			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing vegetation loss and the preservation of species	• Commencement of activity
	Operational		• Stored chemicals must be in marked closed containers	• Chemical storing protocol, indication danger and remediation steps	• Commencement of activity • Integrated into activity
			• For remediation purposes a neutralizing agent for each chemical must be available at the entrance of the room at all times	• Minimizing soil loss to neutralize that the remove	• Commencement of activity • Integrated into activity
			• Unused chemicals must be separated from used chemicals as well as each type of chemical will be grouped 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
			• Safety wear for workers will always be available for urgent situations	• Avoid chemical burns and employee injury	• Commencement of activity • Integrated into activity • Decommissioning of activity
			• Fire extinguishers for this purpose will be available at all times	• Preventing fires that may lead to run-away field fires causing sever vegetation loss	• Commencement of activity • Integrated into activity
			• Chemical and chemical containing waste will be stored in closed containers within the chemical storage room	• Chemical handling protocol avoiding spillage and ground contamination	• Integrated into activity

			• All personnel handling chemical related products will follow handling procedures • 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 • Once the area specified for these waste is approximately 80% full and with decommissioning of the mine, the different agencies dealing with these specific chemicals will be contacted for the safe removal thereof.	• Chemical handling protocol avoiding spillage and ground contamination • With all measures in place is it still the mine's ultimate responsibility for environmental conservation • Forming par to the mine's Environmental Awareness initiative and strategies • Waste handling protocol minimizing environmental risk and ensuring the correct handling of specific chemicals	• Commencement of activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • Commencement of activity • Integrated into activity • Integrated into activity • Decommissioning of activity
	Decommissioning		• With decommissioning of the mine the different agencies dealing with these specific chemicals will be contacted for the safe removal thereof • All structures will be broken down and removed from site • All chemical spills will be rehabilitated immediately	• Avoiding environmental contamination also rehabilitation requirement in complying with closure objective • Rehabilitation needs to be done to comply with closure objective • Avoid ground sterilization and/or disturbance of vegetation regrowth	• Decommissioning of activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity

			• Rip and rehabilitate all compacted areas • Rehabilitation will be finalized by the spreading of soil where necessary and planting of indigenous species with regular inspection for the removal of invader species	• Remedying compacted areas to prevent erosion and promote vegetation regrowth • Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Vehicle parking	Construction	0.0308 ha	• A demarcated fenced area away from the operational sight will be cleared for vehicle storage and parking • The 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 • No indigenous shrubs or trees will be unnecessarily uprooted	• Regulatory requirement avoiding accidental injury • Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life • Minimizing vegetation loss and promote the preservation of species	• Commencement of activity • Commencement of activity • Commencement of activity • Commencement of activity • Integrated into activity

	Operational		• Drip pans will be readily available and no parked heavy vehicle will be without a drip pan. • No vehicle repairs and maintenance will occur within the operational area. • Old diesel and related chemicals must be discarded within appropriate marked close containers and stored in the chemical storage facility till removal thereof • On accidental spillage the contaminated soil will be removed and appropriately stored till the removal there off. Stored soil will be evenly spread to the recover the area • The area must be continuously inspected for spillages and remediated immediately • Suppression of dust on cleared areas will occur by the spraying of water.	• Avoid hydro-carbon fluid spillage causing ground sterilization • Avoid hydro-carbon fluid spillage as far as possible • Avoid hydro-carbon fluid spillage as far as possible • Avoid ground sterilization and/or disturbance of vegetation regrowth • Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation regrowth • Health and Safety as well as NEMA requirement ensuring good air quality and preventing related lung illnesses	• Commencement of activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Integrated into activity • 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	• 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 is the mine still ultimately responsible for 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	• Integrated into 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 chemical spills will be rehabilitated immediately	• Prevent the degradation of environmental health	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity
			• Rehabilitation will be finalized by the spreading of soil where necessary and planting of indigenous species with regular inspection for the removal of invader species	• Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity
Diesel storage	Construction	0.0025 ha	• Diesel tanks will stand in a leak-proof bay, supporting the tank volume plus 10% and a refueling floor	• Avoid hydro-carbon fluid spillage causing ground sterilization that can lead to erosion	• Commencement of activity
			• The floor area must be constructed at a gradient and a run-off sump to capture all contaminated water to be treated by a separator	• Avoid hydro-carbon fluid spillage as far as possible causing ground sterilization	• Commencement of activity
			• All buildings will consist of appropriate signs indicating function and potential dangers	• Regulatory requirement avoiding accidental injury	• Commencement of activity
			• The 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 conservation in preventing loss of animal life	• Commencement of activity
			• No indigenous shrubs or trees will be unnecessarily uprooted	• Minimizing vegetation loss and promote the preservation of species.	• Commencement of activity • Integrated into activity

	Operational		• Vehicles which are filled with fuel will park on a cement 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	• Commencement of activity • Integrated into activity
			• Old diesel and related chemicals must be discarded within appropriate marked close containers and stored in the chemical storage facility till removal thereof	• Chemical handling protocol avoiding spillage and ground contamination	• 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 regrowth	• 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
			• 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
			• Littering of any product, including cigarette buds, shall be seen as an offence and will not be tolerated	• Avoiding possible animal suffering, scenery degradation and possible fire hazard	• 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. • The mine shall ensure that all suppliers and the delivery drivers are aware of procedures and restrictions in terms of this document.	• With all measures in place is the mine still ultimately responsible for environmental conservations • Forming part of the mine's Environmental Awareness initiative and strategies	• Integrated into activity • Decommissioning of activity • Commencement of activity • Integrated into activity
	Decommissioning		• All structures will be broken down and removed from site. • All chemical spills will be rehabilitated immediately • Rip and rehabilitate all compacted areas. • Rehabilitation will be finalized by the spreading of tailing soil where necessary and planting of indigenous species with regular inspection for the removal of invader pioneer species.	• Rehabilitation needs to be done to comply with closure objectives • Avoid ground sterilization and/or disturbance of vegetation regrowth • Remedying compacted areas to prevent erosion and promote vegetation regrowth • Managing vegetation regrowth and promoting indigenous species establishment	• Decommissioning of activity • Integrated into activity • Decommissioning of activity • Integrated into activity • 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after closure	• Closure of activity

Domestic waste	Construction	0.0008 ha	• Waste containers must be municipal approved with a lid and scavenger proof • The only necessary vegetation will be cleared • Construction near offices	• Avoid windblown litter and/or protection against scavengers • Minimizing vegetation loss • Minimizing overall footprint of operations	• Commencement of activity • Integrated into activity • Commencement of activity • Commencement of activity
	Operational		• Domestic waste will be kept in closed marked containers. • Containers will be removed on a regular basis. • Domestic waste will be dumped at a registered site for such disposal. • Scattered litter must be immediately cleaned-up • 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.	• Avoid windblown litter and/or protection against scavengers • Waste handling protocol in keeping the environment clean • Waste management protocol in preventing litter pollution • Preventing and/or remedying environmental degradation • With all measures in place it is still the mine's ultimate responsibility in regard to environmental conservation • Forming part of the mine's Environmental Awareness initiative and strategies	• Commencement of activity • Integrated into activity • Integrated into activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity • Commencement of activity • Integratedinto activity • Decommissioning of activity

			• Once the area specified for these waste is approximately 80% full and with the decommissioning of the mine the different agencies dealing with these domestic waste will be contacted for the safe removal thereof.	• Waste handling protocol minimizing environmental risk and conserving environmental health	• Integrated into activity • Decommissioning of activity
	Decommissioning		• With decommissioning of the mine the specific agencies dealing with domestic waste will be contacted for the safe removal thereof.	• Avoid litter pollution also rehabilitation requirement in complying with closure objective	• Decommissioning of activity
			• All structures will be broken down and removed from site.	• Rehabilitation needs to be done to comply with closure objectives	• Decommissioning of activity
			• All scattered domestic waste will be cleaned-up immediately	• Prevent the degradation of environmental health and possible animal suffering	• Integrated into activity • Decommissioning of activity
			• Rip and rehabilitate all compacted areas.	• Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Decommissioning of activity
			• Regular inspection for the removal of invader species	• Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operations	• Closure of activity

Access and haul roads	Construction	0.2 ha	• As far as possible will be made use of existing farm roads • Only when utmost necessarily will new roads be scrapped. • No foreign materials will be used in the construction of roads • The 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 • No indigenous shrubs or trees will be unnecessarily uprooted • Roads will be marked with the appropriate signs for safety.	• Avoid unnecessary environmental disturbance and vegetation loss • Avoid unnecessary environmental disturbance and vegetation loss • Eliminate excessive rehabilitation cost as all foreign materials must be removed • Minimizing unnecessary vegetation loss • Promote animal conservation in preventing loss of animal life • Minimizing vegetation loss and promote the preservation of species • Regulatory requirement ensuring employee and public individual safety	• Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity • Commencement of activity • Integrated into activity • Commencement of activity • Commencement of activity • Integrated into activity • Commencement of activity
	Operational		• The roads must be continuously inspected for spillages and remediated immediately • All vehicle traffic are restricted to the roads and demarcated traffic areas	• Minimize the probability of soil pollution, ground sterilization and/or disturbance of vegetation regrowth • Avoiding vegetation loss and ground compaction, which can lead to ground erosion	• Integrated into 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.	• 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	• 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 is the mine sill 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.	• Avoid ground sterilization and/or disturbance of vegetation regrowth • Remedying compacted areas to prevent erosion and promote vegetation regrowth	• Integrated into activity • Decommissioning of activity • Integrated into activity • Decommissioning of activity

			• Rehabilitation will be finalized by the spreading of soil where necessary and planting of indigenous species with regular inspection for the removal of invader species.	• Managing vegetation regrowth 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 regrowth rate and the successful establishment of indigenous vegetation.	• Environmental closure objective to create a sustainable environment after operation	• Closure of activity

OTHER MITIGATION MEASURES NOT LISTED WITH LISTED ACTIVITIES

- Vehicles will be equipped with a red flag on a long enough rod to be easily observed by the heavy vehicle drives and a roll bar
- 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 waste storage area shall be fenced off to prevent windblown litter
- The mine shall ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept fee of litter
- No burning, on site burring or dumping of waste shall occur
- Contracts with the local municipality / agencies will be signed for the removal of waste containers on an appropriate schedule of once a week, but if found necessary twice a week
- Access road maintenance throughout the entire project timeframe
- All mine roads will be cleared of foreign materials and ripped to loosen the ground for vegetation regrowth for rehabilitation purposes

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.)
Mining					
Excavation	Vegetation	Loss	Construction	Restriction of roads Vegetation clearing control Rehabilitation	Impact avoided Impact minimized Impact remedied
	Geological	loss	Operational	Rehabilitation	Impact minimized
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Immediate rehabilitation Regular inspections Vehicle maintenance	Impact remedied Impact managed Impact avoided
	Grazing	Loss		Rehabilitation Restriction to cleared areas	Impact remedied Impact avoided
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-

	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed
	Fauna			-	-
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		Operations within business hours Silencer systems on vehicles	Impact minimized Impact minimized
	Air quality	Degradation		Dampening of mine roads Speed restriction	Impact managed Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Topsoil and overburden	Vegetation	Loss	Construction	Dump placement Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		-	-
	Grazing	Loss		Dump placement Rehabilitation	Impact minimized Impact remedied
	Vegetation	Loss/disturbance		Dump placement Rehabilitation	Impact minimized Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed

	Fauna			-	-
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		-	-
	Air quality	Degradation		Protect against wind erosion	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Specified dump height Rehabilitation	Impact minimized Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Stockpiles	Vegetation	Loss	Construction	Placement at plant site	Impact minimized
	Geological	loss	Operational	-	-
	Topographic	Change		Dump placement Rehabilitation	Impact minimized Impact remedied
	Soil	Pollution		-	-
	Grazing	Loss		Dump placement Rehabilitation	Impact minimized Impact remedied
	Vegetation	Loss/disturbance		Dump placement Rehabilitation	Impact minimized Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed
	Fauna			-	-
	Water quality (storm water)	Loss		Storm water management	Impact minimized

	Noise	Elevated levels		-	-
	Air quality	Degradation		Protect against wind erosion	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Specified dump height Rehabilitation	Impact minimized Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Waste dump	Vegetation	Loss	Construction	Dump placement Rehabilitation	Impact minimized Impact remedied
	Geological	Loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		-	-
	Grazing	Loss		Dump placement Rehabilitation	Impact minimized Impact remedied
	Vegetation	Loss/disturbance		Dump placement Rehabilitation	Impact minimized Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed
	Fauna			-	-
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		-	-
	Air quality	Degradation		Protect against wind erosion	Impact minimized

	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Specified dump height Rehabilitation	Impact minimized Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Settling dam	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Dam stability check	Impact avoided
	Grazing	Loss		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		Water reticulation	Impact avoided
	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed
	Fauna			-	-
	Water quality (waste water)	Loss		Water reticulation Waste water management	Impact managed Impact managed
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided

	Sensitive landscape	Destruction		Rehabilitation Dam stability check Adhere to mitigation measures	Impact remedied Impact avoided Impact mitigated
	Visual impact	Scenery loss		Rehabilitation Specified dam height	Impact remedied Impact minimized
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections	Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Water storage dam	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		-	-
	Grazing	Loss		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		Water reticulation	Impact avoided
	Vegetation	Invader plants		Regular removal Report to environmental officer	Impact managed Impact managed
	Fauna			-	-
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Dam stability check Adhere to mitigation measures	Impact remedied Impact avoided Impact mitigated

	Visual impact	Scenery loss		Specified dam height Rehabilitation	Impact minimized Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Office site	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate rehabilitation Regular inspections	Impact remedied Impact managed
	Grazing	Loss		Restriction to cleared areas	Impact avoided
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste management Regular removal	Impact minimized Impact managed
	Fauna			Domestic waste management	Impact avoided
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		Operations within business hours	Impact minimized
	Air quality	Degradation		Dampening of exposed area	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Rehabilitation	Impact remedied

	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections	Rehabilitation standards
				Removal of invader species	Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Processing site	Vegetation	Loss	Construction	Vegetation clearing control	Impact minimized
				Rehabilitation	Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
				Topographical placement	Impact minimized
	Soil	Pollution		Immediate rehabilitation	Impact remedied
				Continuous inspections	Impact managed
				Chemical handling protocol	Impact avoided
				Equipment maintenance	Impact avoided
	Grazing	Loss		Restriction to cleared areas	Impact avoided
				Rehabilitation	Impact remedied
	Vegetation	Loss/disturbance		Restriction to cleared areas	Impact avoided
				Rehabilitation	Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste handling	Impact avoided
				Regular removal	Impact managed
	Fauna			-	-
	Water quality	Loss		Soil pollution management	Impact avoided
				Storm water management	Impact minimized
				Waste water management	Impact managed
	Noise	Elevated levels		Operations within office hours	Impact minimized
	Air quality	Degradation		Dampening of exposed areas	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation	Impact remedied
				Adhere to mitigation measures	Impact minimized

	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Ablution facility	Vegetation	Loss	Construction	Implement near offices Vegetation clearing control Rehabilitation	Impact minimized Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Facility maintenance Immediate clean-up	Impact avoided Impact remedied
	Grazing	Loss		Rehabilitation	Impact remedied
	Vegetation	Loss/disturbance		Rehabilitation	Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal	Impact managed
	Fauna			-	-
	Water quality	Loss		Waste water management Regular septic tank draining	Impact managed Impact managed
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Facility maintenance	Impact remedied Impact avoided
	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards

	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Temporary workshop	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Immediate rehabilitation Regular inspections Adhere to mitigation measures Waste water management	Impact remedied Impact managed Impact mitigated Impact avoided
	Grazing	Loss		Rehabilitation	Impact remedied
	Vegetation	Loss/disturbance		Rehabilitation	Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste handling Regular removal	Impact avoided Impact managed
	Fauna			Waste management	Impact avoided
	Water quality (storm water)	Loss		Waste water management Draining/cleaning of waste water	Impact minimized Impact avoided
	Noise	Elevated levels		Operations during office hours	Impact minimized
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Rehabilitation Waste management	Impact remedied Impact minimized
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards

	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Storage facility	Vegetation	Loss	Construction	Vegetation clearing control Construct near offices Rehabilitation	Impact minimized Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Chemical handling protocol Chemical waste management Immediate rehabilitation	Impact avoided Impact avoided Impact remedied
	Grazing	Loss		Rehabilitation	Impact remedied
	Vegetation	Loss/disturbance		Rehabilitation	Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal	Impact managed
	Fauna			Chemical handling protocol Chemical waste management	Impact avoided Impact avoided
	Water quality (storm water)	Loss		Storm water management Soil pollution management	Impact minimized Impact avoided
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures	Impact remedied Impact minimized
	Visual impact	Scenery loss		Rehabilitation	Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied

Vehicle storage	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Immediate rehabilitation Regular inspections Drip-tray installation Vehicle maintenance Waste management	Impact remedied Impact managed Impact avoided Impact avoided Impact avoided
	Grazing	Loss		Restrictions to cleared areas Rehabilitation	Impact avoided Impact remedied
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste handling Regular removal	Impact avoided Impact managed
	Fauna			Waste management	Impact avoided
	Water quality	Loss		Storm water management Soil pollution management Waste water management Draining/cleaning of waste water	Impact minimized Impact avoided Impact managed Impact managed
	Noise	Elevated levels		Operations during office hours	Impact minimized
	Air quality	Degradation		Dampening of exposed areas	Impact minimized
	Archaeological items	Loss		Avoid sites of significance	Impact avoided
	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures Waste management	Impact remedied Impact minimized Impact avoided
	Visual impact	Scenery loss		Rehabilitation Waste management	Impact remedied Impact avoided

	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Diesel storage	Vegetation	Loss	Construction	Vegetation clearing control Construct near vehicle parking Rehabilitation	Impact minimized Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Construct near vehicle parking Rehabilitation	Impact minimized Impact remedied
	Soil	Pollution		Regular maintenance Regular inspections Immediate rehabilitation Operational procedures	Impact avoided Impact managed Impact remedied impact avoided
	Grazing	Loss		Restrictions to cleared areas Rehabilitation	Impact avoided Impact remedied
	Vegetation	Loss/disturbance		Restriction to cleared areas Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular inspections	Impact managed
	Fauna			Soil pollution management Immediate rehabilitation	Impact managed Impact avoided
	Water quality (storm water)	Loss		Soil pollution management Storm water management	Impact avoided Impact minimized
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		Avoid sites of significance	Impact avoided

	Sensitive landscape	Destruction		Rehabilitation Adhere to mitigation measures Waste management	Impact remedied Impact minimized Impact avoided
	Visual impact	Scenery loss		Rehabilitation Waste management	Impact remedied Impact avoided
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections	Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Domestic waste	Vegetation	Loss	Construction	Vegetation clearing control Rehabilitation	Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		-	-
	Soil	Pollution		Immediate clean-up Adhere to mitigation measures	Impact remedied Impact minimized
	Grazing	Loss		Rehabilitation	Impact remedied
	Vegetation	Loss/disturbance		Rehabilitation	Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Regular removal Domestic waste handling	Impact managed Impact minimized
	Fauna			Domestic waste handling Immediate clean-up Adhere to mitigation measures	Impact avoided Impact minimized Impact managed
	Water quality (storm water)	Loss		Storm water management	Impact minimized
	Noise	Elevated levels		-	-
	Air quality	Degradation		-	-
	Archaeological items	Loss		-	-
	Sensitive landscape	Destruction		Immediate clean-up Domestic waste handling	Impact remedied Impact avoided

	Visual impact	Scenery loss		Domestic waste handling Rehabilitation	Impact avoided Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections Removal of invader species	Rehabilitation standards Rehabilitation standards
	Safety risks	Waste disposal		Closure standards	Impact remedied
Access and haul roads	Vegetation	Loss	Construction	Make use of existing roads Minimum roads possible Rehabilitation	Impact avoided Impact minimized Impact remedied
	Geological	loss	Operational	-	-
	Topographic	Change		Rehabilitation	Impact remedied
	Soil	Pollution		Vehicle maintenance Regular inspections Immediate rehabilitation	Impact avoided Impact managed Impact remedied
	Grazing	Loss		Restriction to roads Rehabilitation	Impact avoided Impact remedied
	Vegetation	Loss/disturbance		Restriction to roads Rehabilitation	Impact avoided Impact remedied
	Water table	Depressed		-	-
	Vegetation	Invader plants		Domestic waste handling Regular inspections Removal of invader species	Impact avoided Impact managed Impact managed
	Fauna			Silencer systems on vehicles Minimum traffic possible Speed restriction	Impact minimized Impact minimized Impact avoided
	Water quality (storm water)	Loss		Soil pollution management Storm water control	Impact avoided Impact minimized
	Noise	Elevated levels		Operations during office hours Silencer systems on vehicles	Impact minimized Impact minimized

	Air quality	Degradation		Dampening of exposed areas Speed restrictions	Impact minimized Impact minimized
	Archaeological items	Loss		Restriction to roads Avoid sites of significance	Impact avoided Impact avoided
	Sensitive landscape	Destruction		Minimum roads possible Soil pollution management Rehabilitation	Impact minimized Impact avoided Impact remedied
	Visual impact	Scenery loss		Dust control measures Rehabilitation	Impact minimized Impact remedied
	Waste	Disposal	Decommissioning	Management standards	Impact avoided
	Vegetation	Re-growth		Regular inspections	Rehabilitation standards
	Area rehabilitation	Re-vegetation	After closure	Regular inspections 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)
Mining				
Excavations	Vegetation loss	Restriction of roads Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the impact in trying to rectify the geological stratigraphy of the area
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography

	Soil pollution	Immediate rehabilitation Regular inspections Vehicle maintenance	Commencement of activity Integrated into activity	Avoiding soil pollution as far as possible in order to prevent sterilization of ground, vegetation loss and the possible impact on the animals and ground/surface water bodies in the event of a storm run-off
	Grazing loss	Rehabilitation Restriction to cleared areas	Commencement of activity 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	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
	Depressed water table	-	-	-
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (storm water)	Storm water management	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operations within business hours Silencer systems on vehicles	Commencement of activity Integrated into activity	Minimizing the effect the noise created by the operations have on the residents, animals and surrounding environment
	Air quality degradation	Dampening of mine roads Speed restrictions	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance
	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	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Topsoil and overburden	Vegetation loss	Dump placement Rehabilitation	Commencement of activity Integrated into activity	Preventing the extensive loss of vegetation, thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	-	-	-
	Grazing loss	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Dump placement 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
	Depressed water table	-	-	-
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (storm water)	Storm water management	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	-	-	-
	Air quality degradation	Protect against wind erosion	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Specified dump height Rehabilitation	Integrated into activity Decommissioning of activity Closure of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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.
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Stockpiles	Vegetation loss	Placement at plant site	Commencement of activity Integrated into activity	Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	-	-	-
	Grazing loss	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Dump placement 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
	Depressed water table	-	-	-
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (storm water)	Storm water management	Commencement of activity Integrated into activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	-	-	-
	Air quality degradation	Protect against wind erosion	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Specified dump height Rehabilitation	Commencement of activity Integrated into activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Waste dump	Vegetation loss	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standard in remedying the effect of the activity by removing all dump material
	Soil pollution	-	-	-
	Grazing loss	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Dump placement Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Depressed water table	-	-	-
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (storm water)	Storm water management	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	-	-	-
	Air quality degradation	Protect against wind erosion	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Specified dump height Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Settling dam	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity.
	Soil pollution	Dam stability check	Integrated into activity Decommissioning of activity	Avoiding leakage of silt into the environment and breakage of dam wall, which can have a detrimental effect on the environment
	Grazing loss	Restriction to cleared areas Rehabilitation	Commencement of activity 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	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Depressed water table	Water reticulation	Integrated into activity Decommissioning of activity	Minimizing water used during the mineral processing by recycling water as far as possible
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (waste water)	Water reticulation Waste water management	Integrated into activity Decommissioning of activity	Waste management standards optimizing the rehabilitation process as well as minimizing overall water consumption

	Noise disturbance	-	-	-
	Air quality degradation	-	-	-
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Dam stability check Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoid the pollution, degradation and/or destruction of any significant sensitive landscape
	Visual impact	Rehabilitation Specified dam height	Integrated into activity Decommissioning of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original undisturbed state.

Water storage dam	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity.
	Soil pollution	-	-	-
	Grazing loss	Restriction to cleared areas Rehabilitation	Commencement of activity 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	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
	Depressed water table	Water reticulation	Integrated into activity Decommissioning of activity	Minimizing water use during the mineral processing by recycling water as far as possible
	Invader plants	Regular removal Report to environmental officer	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (storm water)	Storm water management	Integrated into activity Decommissioning of activity	Managing storm water run-off for storage to be used during mineral processing, resulting in lesser source water consumption
	Noise disturbance	-	-	-
	-	-	-	-

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Dam stability check Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Specified dam height Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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
	Re-vegetation	Regular inspections	Integrated into activity Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Office site	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	-	-	-
	Soil pollution	Immediate rehabilitation Regular inspections	Integrated into activity Decommissioning of activity	Avoiding, minimizing and remedying of any spillage preventing any adverse effect that the spillage may have on the environment
	Grazing loss	Restriction to cleared areas	Commencement of activity 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	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation have on the overall environment
	Depressed water table	-	-	-
	Invader plants	Domestic waste management Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	Domestic waste management	Integrated into activity Decommissioning of activity	Avoiding injury and/or loss of life through scattered waste materials
	Water quality loss (storm water)	Storm water management	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operations within business hours	Commencement of activity Integrated into activity	Minimizing the effect the noise created by the operations have on the residents, animals and surrounding environment

	Air quality degradation	Dampening of mine roads	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the effect the activity may have on the scenery of the area and/or rectifying the disturbance to promote a successful vegetation regrowth 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 wastes
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area

	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Processing site	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation Topographical placement	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	Immediate rehabilitation Continuous inspections Chemical handling protocol Equipment maintenance	Integrated into activity Decommissioning of activity	Avoiding soil pollution as far as possible in order to prevent sterilization of ground, vegetation loss and the possible impact on the animals and ground/surface water bodies in the event of a storm run-off
	Grazing loss	Restriction to cleared areas Rehabilitation	Commencement of activity 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	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
	Depressed water table	-	-	-

	Invader plants	Domestic waste handling Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss	Soil pollution management Storm water management Waste water management	Commencement of activity Integrated into activity Decommissioning of activity	Avoid spillage and ground contamination, preventing run-off storm water contamination as well as process waste water released into the environment degrading the overall status thereof
	Noise disturbance	Operations within office hours	Integrated into activity	Minimizing the effect the noise created by the operations have on the residents, animals and surrounding environment
	Air quality degradation	Dampening of exposed areas	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation regrowth 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	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Ablution facility	Vegetation loss	Implement near offices Vegetation clearing control Rehabilitation	Commencement of activity	Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	-	-	-
	Soil pollution	Facility maintenance Immediate clean-up	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	Commencement of activity Integrated into activity Decommissioning of activity	Rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment

	Depressed water table	-	-	-
	Invader plants	Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	-	-	-
	Water quality loss (waste water)	Waste water management Regular septic tank draining	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	-	-	-
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Facility maintenance	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoid the pollution, degradation and/or destruction of any significant sensitive landscape
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation regrowth decreasing the footprint of vegetation cleared areas
	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 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 regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Temporary workshop	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	Immediate rehabilitation Regular inspections Adhere to mitigation measures Waste water management	Integrated into activity Decommissioning of activity	Avoiding soil pollution as far as possible in order to prevent sterilization of ground, vegetation loss and the possible impact on the animals and ground/surface water bodies in the event of a storm run-off
	Grazing loss	Rehabilitation	Integrated into activity Decommissioning of activity	Rectifying the loss of vegetation used for livestock grazing and nesting grounds

	Vegetation disturbance	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing the disturbance and loss of vegetation, minimizing the effect on the overall environment
	Depressed water table	-	-	-
	Invader plants	Domestic waste handling Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	Waste management	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing scattered waste materials will help to prevent animal suffering and even loss of life
	Water quality loss (storm water)	Waste water management Draining/cleaning of waste water	Integrated into activity Decommissioning of activity	Waste managing standards as all chemical containing waste must be treated at the appropriate facility as well as avoiding the risk it poses in regard to environmental degradation
	Noise disturbance	Operations during office hours	Integrated into activity	Restricting the noise distrubance to aceptable hours to minimize the effect on the residing farm owners
	Air quality degradation	-	-	-
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas

	Visual impact	Rehabilitation Waste management	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote as successful vegetation regrowth 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	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Storage facility	Vegetation loss	Vegetation clearing control Construct near offices Rehabilitation	Commencement of activity Integrated into activity	Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	-	-	-

	Soil pollution	Chemical handling protocol Chemical waste handling Immediate rehabilitation	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, the possible impact on the animals and ground/surface waterbodies in the event of storm water run-off
	Grazing loss	Rehabilitation	Integrated into activity Decommissioning of activity	Rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Depressed water table	-	-	-
	Invader plants	Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	Chemical handling protocol Chemical waste management	Integrated into activity Decommissioning of activity	Avoid soil pollution and the possible health effects on animals that can cause distress, suffering and/or loss of life
	Water quality loss (storm water)	Storm water management Soil pollution management	Commencement of activity Integrated into 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	-	-	-

	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures	Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Rehabilitation	Integrated into activity Decommissioning of activity	Minimizing and rectifying the loss of scenery and the visual impact caused by the operations
	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 hydro-carbon fluid and/or hydro-carbon fluid waste
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

Vehicle storage	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	Immediate rehabilitation Regular inspections Drip-tray installation Vehicle maintenance Waste management	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding soil pollution as far as possible in order to prevent sterilization of ground, vegetation loss and the possible impact on the animals and ground/surface water bodies in the event of a storm run-off
	Grazing loss	Restriction to cleared areas Rehabilitation	Commencement of activity 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	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
	Depressed water table	-	-	-
	Invader plants	Domestic waste handling Regular removal	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area

	Fauna	Waste management	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing scattered wastes materials will help to prevent animal suffering and even loss of life
	Water quality loss	Storm water management Soil pollution management Waste water management Draining/cleaning of waste water	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	Operations within business hours	Commencement of activity Integrated into activity	Minimizing the effect the noise created by the operations have on the residents, animals and surrounding environment
	Air quality degradation	Dampening of mine roads	Integrated into activity	Minimizing the amount of dust released into the air preserving air quality as far as possible
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures Waste management	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the activity may have on any sensitive area
	Visual impact	Rehabilitation Waste management	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation regrowth 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	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Diesel storage	Vegetation loss	Vegetation clearing control Construct near vehicle parking Rehabilitation	Commencement of activity Integrated into activity	Preventing the extensive loss of vegetation thereby keeping the footprint to a minimum
	Geological loss	-	-	-
	Topographic change	Construct near vehicle parking Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography
	Soil pollution	Regular maintenance Regular inspections Immediate rehabilitation Operational procedures	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding, minimizing and remedying of spillage preventing sterilization of the ground, vegetation loss, the possible impact on the animals and ground/surface waterbodies in the event of a storm water run-off
	Grazing loss	Restriction to cleared areas Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and rectifying the trampling of vegetation used for livestock grazing and ground compaction

	Vegetation disturbance	Restriction to cleared areas Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding the loss of vegetation and ground compaction. Where vegetation growth is hindered an greater probability of erosion exists
	Depressed water table	-	-	-
	Invader plants	Regular inspections	Integrated into activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	Soil pollution management Immediate rehabilitation	Integrated into activity Decommissioning of activity	Avoid soil pollution and the possible health effects on animals that can cause distress, suffering and/or loss of life
	Water quality loss (storm water)	Soil pollution management Storm water 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	-	-	-
	Archaeological items	Avoid site of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance
	Sensitive landscape	Rehabilitation Adhere to mitigation measures Waste management	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas

	Visual impact	Rehabilitation Waste management	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation regrowth 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 diesel and diesel containing waste
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Domestic waste	Vegetation loss	Vegetation clearing control Rehabilitation	Commencement of activity Integrated into activity	Only the necessary area should be cleared to avoid extensive vegetation loss
	Geological loss	-	-	-
	Topographic change	-	-	-
	Soil pollution	Immediate clean-up Adhere to mitigation measures	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	Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and rectifying the loss of vegetation used for livestock grazing and nesting grounds
	Vegetation disturbance	Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the disturbance and loss of vegetation minimizing the effect on the overall environment
	Depressed water table	-	-	-
	Invader plants	Regular removal Domestic waste handling	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	Domestic waste handling Immediate clean-up Adhere to mitigation measures	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)	Storm water management	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination
	Noise disturbance	-	-	-
	Air quality degradation	-	-	-
	Archaeological items	-	-	-
	Sensitive landscape	Immediate clean-up Domestic waste handling	Commencement of activity Integrated into activity Decommissioning of activity	Avoiding and/or minimizing the effect litter and litter pollution may have on sensitive landscapes
	Visual impact	Domestic waste handling Rehabilitation	Integrated into activity Decommissioning of activity	Avoiding and managing the effect of scattered waste materials have on the scenery of the area and surrounding environment.

	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 littered plastics and related waste materials
	Re-vegetation	Regular inspections	Integrated into activity 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 regrowth and halter the growth of vegetation
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.
Access and haul roads	Vegetation loss	Make use of existing roads Minimum roads possible Rehabilitation	Commencement of activity Integrated into activity	Avoid extensive and unnecessary vegetation loss
	Geological loss	-	-	-
	Topographic change	Rehabilitation	Integrated into activity Decommissioning of activity	Complying with the rehabilitation standards in remedying the effect of the activity, also prevent erosion channels from forming and degrading the natural topography

	Soil pollution	Vehicle maintenance Regular inspections Immediate rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Prevents the sterilization of soil by hydro-carbon fluids
	Grazing loss	Restriction to roads Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity	Prevents the trampling of vegetation and compaction of the ground
	Vegetation disturbance	Restriction to roads 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
	Depressed water table	-	-	-
	Invader plants	Domestic waste handling Regular inspections Removal of invader species	Integrated into activity Decommissioning of activity Closure of activity	Managing and preventing the establishment of invader species endangering the indigenous species of the area
	Fauna	Silencer systems on vehicles Minimum traffic possible Speed restriction	Integrated into activity	Avoid unnecessary stress in animals that can cause suffering and/or loss of life
	Water quality loss (storm water)	Soil pollution management Storm water control	Integrated into activity Decommissioning of activity	Avoiding run-off storm water contamination as well as excessive erosion during such an event
	Noise disturbance	Operations within business hours Silencer systems on vehicles	Commencement of activity Integrated into activity	Restricting the noise disturbance to acceptable hours to minimize the effect on the environment
	Air quality degradation	Dampening of mine roads Speed restrictions	Integrated into activity	Reduced speed and stabilizing of dust by dampening will minimize dust upliftment influencing the air quality
	Archaeological items	Restriction to roads Avoid sites of significance	Commencement of activity Integrated into activity	Avoiding the destruction of any structures of archaeological and/or cultural significance

	Sensitive landscape	Minimum roads possible Soil pollution management Rehabilitation	Commencement of activity Integrated into activity Decommissioning of activity Closure of activity	Avoiding and/or minimizing the effect and degradation the operations may have on any significant sensitive areas
	Visual impact	Dust control measures Rehabilitation	Integrated into activity Decommissioning of activity	Remedying the disturbance to promote a successful vegetation regrowth 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 waste materials
	Re-vegetation	Regular inspections	Decommissioning of activity Closure of activity	Complying with the rehabilitation standards and closure objectives by monitoring vegetation regrowth of the disturbed area
	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 regrowth of the disturbed areas, removing invader species and ensuring the state off environment is as close as possible to the original state.

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

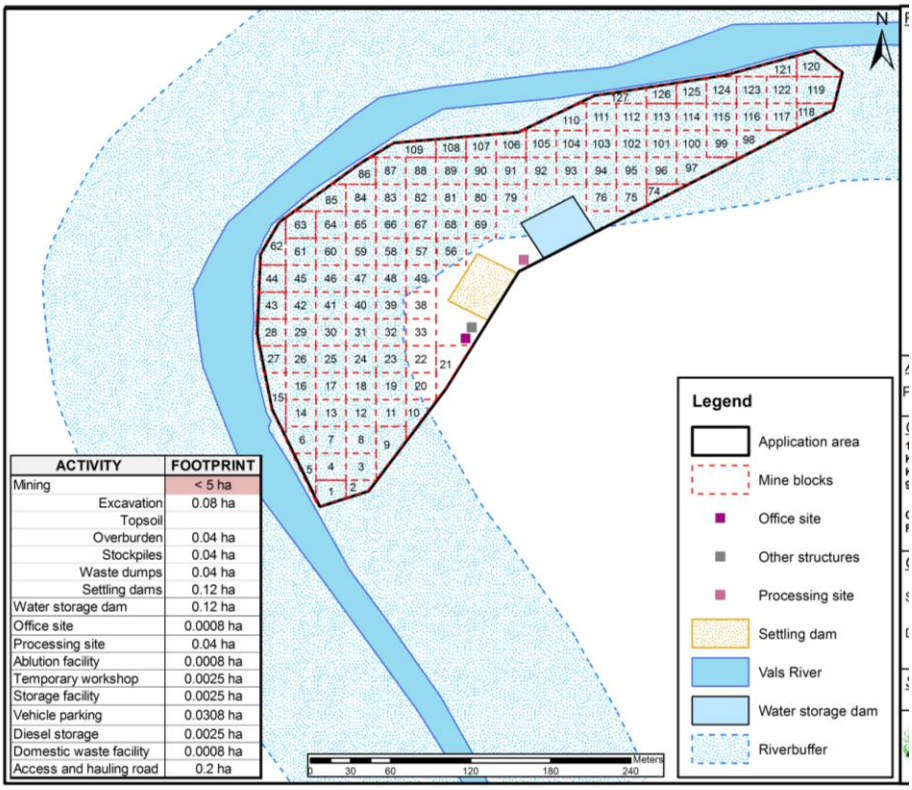
The main closure objective is to create a post-mining environment through extensive rehabilitation to such an extent that it closely represents the original environment and is closely aligned with the baseline environment

When rehabilitation proves successful the vegetation regrowth must be of such quality that the area can be used as a grazing field for farming 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 have been consulted with the landowner. The land after mining will be the continuation of natural grazing land.

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



ACTIVITY	FOOTPRINT
Mining	< 5 ha
Excavation	0.08 ha
Topsoil	
Overburden	0.04 ha
Stockpiles	0.04 ha
Waste dumps	0.04 ha
Settling dams	0.12 ha
Water storage dam	0.12 ha
Office site	0.0008 ha
Processing site	0.04 ha
Ablution facility	0.0008 ha
Temporary workshop	0.0025 ha
Storage facility	0.0025 ha
Vehicle parking	0.0308 ha
Diesel storage	0.0025 ha
Domestic waste facility	0.0008 ha
Access and hauling road	0.2 ha

The rehabilitation of the area forms an integral part of the activities and will be done continuously to ensure cost effective and successful mining operations. The boulder/larger stone material with the surplus form the wet screens will be backfilled into the fully excavated areas

until all the waste material have been depleted and sloping the sides of the remaining excavation to less than 30° to create a safe post mining state. Once backfilling is competed the mixture of fine sand, silt, clay and alluvium (combined as soil) will be evenly spread to finalize the rehabilitation of the area.

After rehabilitation has been finalized a two to three year maintenance programme is initiated. All rehabilitated areas will be regularly checked for invader species. If such species are found they will be removed to ensure successful revegetation of indigenous plant species.

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.

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: PITSO 7STAR SAND EN KLIP (PTY) ltd — Location: BOSPOORT 558 — Date: Feb-19

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	400	R 16.40	1	1	R 6 560.00
2 (A)	Demolition of steel buildings and structures	m2	25	R 228.40	1	1	R 5 710.00
2(B)	Demolition of reinforced concrete buildings and structures	m2	158	R 336.59	1	1	R 53 181.22
3	Rehabilitation of access roads	m2	2 000	R 40.87	1	1	R 81 740.00
4 (A)	Demolition and rehabilitation of electrified railway lines	m		R 396.70	1	1	R -
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m		R 216.38	1	1	R -
5	Demolition of housing and/or administration facilities	m2	8	R 456.80	1	1	R 3 654.40
6	Opencast rehabilitation including final voids and ramps	ha	0.08	R 232 488.77	1	1	R 18 599.10
7	Sealing of shafts adits and inclines	m3		R 122.62	1	1	R -
8 (A)	Rehabilitation of overburden and spoils	ha	0.12	R 159 640.69	1	1	R 19 156.88
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0.12	R 198 829.59	1	1	R 23 859.55
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		R 577 495.38	1	1	R -
9	Rehabilitation of subsided areas	ha	0.14	R 133 675.03	1	1	R 18 714.50
10	General surface rehabilitation	ha	0.0016	R 126 462.35	1	1	R 202.34
11	River diversions	ha		R 126 462.35	1	1	R -
12	Fencing	m		R 144.25	1	1	R -
13	Water management	ha	0.24	R 48 084.54	1	1	R 11 540.29
14	2 to 3 years of maintenance and aftercare	ha	0.9607	R 16 829.59	1	1	R 16 168.19
15 (A)	Specialist study	Sum				1	R -
15 (B)	Specialist study	Sum				1	R -
					Sub Total 1		R 259 086.48

1	Preliminary and General	R 31 090.38	weighting factor 2 / 1	R	31 090.38
2	Contingencies	R 25 908.65		R	25 908.65
			Subtotal 2	R	316 085.50
			VAT (15%)	R	44 251.97
			Grand Total	R	**360 337.47**

Actual mining and the removal of sand material is going to be done over most of the area, with mining related activities and structures placed on already disturbed/mined land as mining progresses. This results in that the total disturbed area cannot be calculated according the financial provision table.

Although the total financial quantum calculates to R360 337.47 it is rather advised that the payable financial quantum is **R 180 338.00** considering the type and scale of the mining operations with the possible duration of the activities

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

The applicant will provide the total amount of **R 180 338.00** in the form of a bank guarantee on the granting of this Mining Permit application.

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.
Mining				
Excavation	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Topsoil and overburden	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	-	-	-
	Noise disturbance	-	-	-
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous

Stockpiles	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	-	-	-
	Noise disturbance	-	-	-
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Waste dump	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	-	-	-
	Noise disturbance	-	-	-
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Settling dam	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	-	-	-
	Air quality loss	-	-	-
	Waste management	Monitoring waste management	Environmental manager	Continuous
Water storage dam	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	-	-	-
	Noise disturbance	-	-	-
	Air quality loss	-	-	-
	Waste management	Monitoring waste management	Environmental manager	Continuous

Office block	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Processing site	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Ablution facility	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	-	-	-
	Air quality loss	-	-	-
	Waste management	Monitoring waste management	Environmental manager	Continuous
Temporary workshop	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous

Storage facility	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	-	-	-
	Air quality loss	-	-	-
	Waste management	Monitoring waste management	Environmental manager	Continuous
Vehicle storage	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Diesel storage	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	-	-	-
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 monthly
	Waste management	Monitoring waste management	Environmental manager	Continuous
Domestic waste facility	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	-	-	-
	Air quality loss	-	-	-
	Waste management	Monitoring waste management	Environmental manager	Continuous

Mine and haul roads	Vegetation loss	Extent of vegetation loss	Environmental Manager	Yearly
		Vegetation re-establishment rate	Environmental Manager	Yearly
		Presence of invader species	Environmental Manager	Yearly
	Soil pollution	Visible spills on ground	Environmental Manager	Continuous
	Noise disturbance	Monitoring of noise levels	Noise monitoring specialist	6 monthly
	Air quality loss	Monitoring of dust fall	Air monitoring specialist	6 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 or 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 an annual basis 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 duds are to be littered during the duration of the mining operations. Garbage containers will be installed and maintained to prevent litter pollution.

- Open fires – Due to the hot and dry conditions of the region is it very susceptible for runaway fires. No open fires will be tolerated during the mining 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.

  Mine employees 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 Free State region is easily endangered by pioneer species invading the Free State 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 pioneer species and be educated on which plant species are indigenous, endangered or pioneer.

  - ✓ If any pioneer 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 e.g. cutting branches/bark from a Camel/Grey Camel tree.

- Work Related Awareness
  - Storage

    All storage personnel will receive a basic information session regarding the threats of diesel, oil and other related chemicals impose on the environment.

    The following must be implemented or enforced:-

    - ✓ Before cleaning the storage area, make sure all spillages have been treated.

    - ✓ When handling related chemicals make sure of non-spillage procedures.

    - ✓ Make sure boots are cleaned from chemicals before leaving the workshop into the unprotected environment.

    - ✓ When working on equipment outside the storage, the appropriate measures needs to be implemented to prevent chemical spillage.

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

- Heavy vehicle operators

  All heavy vehicles pose a threat to the environment in several ways. Some awareness must be initiated by the operators to minimize the treat to the environment.

  The following must be implemented or enforced:-

  - ✓ Daily checking for oil/diesel leakages before vehicle is operated
  - ✓ Drip pans must be installed during “off-time”
  - ✓ Immediate communication with the workshop when faults are observed.
  - ✓ Strict adherence to the mine roads and no off-road driving to prevent trampling of vegetation
  - ✓ Driving speed must be complied with. Beware of animals, workers and other vehicles.

- Machinery operators

  Although the operational mining equipment does not pose any environmental risk, employees still need to adhere to some measurements to prevent spillage.

- Maintenance personnel

  All maintenance personnel must receive basic training on work related environmental awareness to minimize/eliminate the possibility of environmental degradation.

  Pointers that will be looked at:-

  - ✓ Electricians may not leave any cables unprotected scattered on the site – animals may get tangled up.
  - ✓ During fencing/rehabilitation 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 chemical used must be put to storage afterwards – containers may leak and environmental contamination occurs.

1.11 Specific information required by the Competent Authority

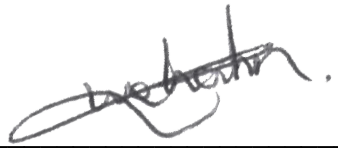
(Among others, confirm that the financial provision will be reviewed annually)

- Annually 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**
Date: **21 February 2019**

***** END *****